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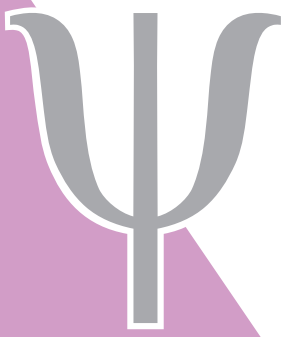

REDIGUNT
MARIA DAVID,
E. MAGDOLNA VARGA,
AGNES LUDANYI

EGER, 2007

AZ ESZTERHÁZY KÁROLY FŐISKOLA
TUDOMÁNYOS KÖZLEMÉNYEI

ÚJ SOROZAT XXXIV. KÖTET

TANULMÁNYOK A PSZICHOLÓGIAI TUDOMÁNYOK KÖRÉBŐL

SZERKESZTI

DÁVID MÁRIA,
ESTEFÁNNÉ VARGA MAGDOLNA,
LUDÁNYI ÁGNES

EGER, 2007

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TARTALOM

INTRODUCTION

This volume, titled

„ARION"
„Studies from the Field of Applied Psychology and Social Pedagogy"

is published by Eszterházy Károly College, Faculty of Teachers' Training and Knowledge Technology. The actuality of this volume in English is that from 23. to 28. April, 2006, an international „ARION" seminar was organized by the Department of Psychology and the Centre for International Relations of Eszterházy Károly College. The aim of this seminar for educational professionals were to help exchange of experience in Europe and to diffuse international experience in educational issues.

In the topic of „Prevention of academic setbacks", the Eszterházy Károly College, Department of Psychology won the right to organize the seminar. In that year, our College was the only Hungarian organizing institution. From eight countries, nine teachers took part in the course; most of them were head teachers or education officers. The participants introduced the education system of their countries, and the local way of preventing academic setbacks; the organizing institution made the participants acquainted with the Hungarian research results on school failures. Besides the lecturers of Eszterházy Károly College, the following guest lecturers gave a lecture or workshop in the seminar:

- Mark B. Kinney, professor emeritus of University of Toledo, USA
- Melinda Gyenei, senior lecturer of Eötvös Lóránd University, Budapest
- Éva Gyarmathy, senior researcher, Institute for Psychology of the Hungarian Academy of Sciences.

The program also offered the possibility for the participants to visit institutions of public education: they visited the Kindergarten of Arany János Street, Arany János Primary School and Vocational School, Primary School of Szalapart Street and the Demonstration School of Eszterházy Károly College. Participants were welcomed by Zoltán Hauser, rector of the College, and Miklós Törőcsik, deputy mayor of Eger.

The first part of this volume involves the lectures presented on the ARION seminar.

In the second part, publications of research results of the Department of Psychology and the Department of Social Pedagogy can be found. The studies cover four main thematic fields:

- Among **researches on primary and secondary school children** we can find studies on the mental development and academic achievement of prematurely born children, on possibilities of enhancing the chance of continuation of studies in a disadvantageous region, and on issues of learning diagnostics and learning development.
- **Researches regarding university and college students** report about aspects of professional attitudes, values and psychological coping strategies of university and college students.
- Studies about **experiences of higher education** concern with the relationship of self-knowledge and professional identity, and aspects of group work.
- **Studies on art psychology** provide a possibility for psychological analysis of interactions represented in literary works, and introduce musical involvement as a personality trait.

The main aim of publishing this volume is to give a summarization of the local research results in English, to provide a subsidiary material for educational purposes for example in international programs like this ARION course, and to help the education of foreign students studying in our College.

02. April, 2007., Eger

The Editors

ELŐSZÓ

Az

„ARION”
„Tanulmányok az alkalmazott pszichológia és szociálpedagógia területéről”

című kötet, az Eszterházy Károly Főiskola Tanárképzési és Tudástechnológiai Karának kiadványa. Az angol nyelven megjelenő tanulmánykötet aktualitását az adja, hogy az EKF Pszichológia Tanszéke és a Nemzetközi Kapcsolatok Központja 2006 április 23-a és 28-a között egy nemzetközi szemináriumot szervezett az „ARION” akció keretében. Az oktatáspolitikai szakértők számára meghirdetett szeminárium célja az európai szintű tapasztalatcsere elősegítése és a nemzetközi tapasztalatok terjesztése oktatási kérdésekben.

Az iskolai kudarcok megelőzése témakörében a szervezés jogát az EKF Pszichológia Tanszéke nyerte el, abban az évben egyedüliként Magyarországon. A kurzuson 8 országból kilenc pedagógus vett részt, zömében iskolavezetők, vagy oktatáspolitikusok. A résztvevők bemutatták saját oktatási rendszerüket, és ezen belül az iskolai kudarcok megelőzésének helyi gyakorlatát, a szervező intézmény pedig a magyarországi kutatási eredményekkel ismertette meg a résztvevőket. Az EKF oktatóin kívül előadást tartott vagy workshopot vezetett Mark B. Kinney, a Toledo-i Egyetem professzor emeritusa, Gyenei Melinda, az Eötvös Lóránd tudományegyetem adjunktusa, és Gyarmathy Éva a Magyar Tudományos Akadémia Pszichológiai Kutatóintézetének tudományos főmunkatársa. A program lehetőséget adott arra is, hogy a résztvevők közoktatási intézményekkel is megismerkedjenek, így intézménylátogatást tettek az Arany János úti óvodában, az Arany János Általános Iskola és Szakiskolában, a Szalapart úti Általános Iskolában valamint az Eszterházy Károly Főiskola Gyakorló Iskolájában. A vendégeket fogadta Hauser Zoltán a Főiskola rektora, valamint Törőcsik Miklós, Eger város alpolgármestere. A kötet első része azokat az előadásokat tartalmazza, amelyek az ARION szemináriumon elhangzottak.

A kötet második részében a Pszichológia Tanszék és a Szociálpedagógia Tanszék kutatási eredményeinek publikációi olvashatók.

A kutatások négy fő tematikai egységet ölelnek fel:

- Az általános és középiskolás korosztály körében végzett vizsgálatok: között nyomon követhetjük a koraszülöttek értelmi fejlődésének és iskolai teljesítményének összefüggéseit, a hátrányos helyzetű régiók esélyteremtési lehetőségeit, és a tanulásdiagnosztika és tanulásfejlesztés kérdéseit.
- **Az egyetemi és főiskolai hallgatók körében végzett kutatások között** olvashatunk a szakmai attitűdök sajátosságairól, az egyetemisták értékrendjéről, és a megküzdési stratégiák jellemzőiről.
- **A főiskolai képzés tapasztalatai között** az önismeret és a szakmai identitás, és a csoportmunka jellegzetességei találhatók.
- **A művészetpszichológiai írások** pedig az irodalmi művekben megjelenő interakciók elemzésének lehetőségeit, és a zenei bevonódást, mint személyiségvonást mutatják be.

A kötet megjelentetésének fő célja, hogy angol nyelven is összefoglalja a helyi kutatási eredményeket, hogy az ARION-hoz hasonló nemzetközi programok szervezése során oktatási segédanyagként felhasználható legyen, és ajánlott olvasmányként a Főiskolánkon tanuló, nem magyar anyanyelvű vendéghallgatók képzését segítse.

Eger, 2007. Április 2.

A szerkesztők

PARTICIPANTS OF THE „ARION" COURSE
AZ „ARION" KURZUS RÉSZTVEVŐINEK NÉVSORA

Alves Monteiro Maria Fernanda, *Portugália*: iskolapszichológus

Biernat Maria, *Lengyelország*: vezetőtanár, módszertani konzultáns

Klaveness Ruth Cecilie, *Norvégia*: tanár, igazgatóhelyettes

Muscat Frankie, *Málta*: az oktatási minisztérium középiskolákért felelős részlege

Young Andrew, *Anglia*: iskolaigazgató

Howels Linda, *Anglia*: iskolaigazgató

Ollila Satu, *Finnország*: igazgatóhelyettes

Beauchesne-Gramunt Laurence, *Franciaország*: pszichológus

Jensen Kirsten, *Dánia*: tanár

ARTICLES FOR THE ARION COURSE TITLED “PREVENTION OF ACADEMIC SETBACKS AND LEARNING DIFFICULTIES IN PRIMARY AND SECONDARY SCHOOL”

ÉVA GYARMATHY

THE TREATMENT OF SPECIFIC LEARNING DIFFICULTIES IN THE CLASSROOM

Introduction

The aim of this study is to provide effective knowledge for teachers to treat specific learning difficulties (SLD) in the classroom.

Our starting point was that SLDs are not the consequence of a single cause. Specific learning difficulty is a broad term that covers a pool of possible causes, symptoms, treatments and outcomes. SLDs can show up in many forms, and it is difficult to diagnose or to pinpoint the causes. However, we may decrease the number of possible endangering factors, and compensate for their injurious effects. The earlier we start, the more we can achieve. As to education, nursery years are the first opportunity for intervention, however, SLDs result in real problems mainly in the school years.

Specific learning difficulties

Specific learning difficulty (SLD) is a summing name of a syndrome which is controversial in its definition, origin and even in its symptoms. Thus it is not surprising that several different names are used for the concept: specific learning difficulties, learning disabilities, or dyslexia. In the UK, the term *specific learning difficulties* is often regarded as a synonym of dyslexia. Indeed, the British Dyslexia Association states on its headed notepaper that it is “The national organization for specific learning difficulties”.

However, an increased understanding that there are many different underlying cognitive modules (Anderson, 1992) that affect the learning process has led to a plethora of different terms, the meaning of which will change depending on context and users. Examples include dyspraxia, dysgraphia and dyscalculia, which are subtypes and syndromes of SLD.

Given this lack of a consistent name, there are many misunderstandings in research, in the relevant literature and in practice, as well. Since the syndrome is best described by the term “specific learning difficulties”, this name will be used in this work. Exceptions are made for citations, where we keep the original terms used by the authors cited.

Description and related syndromes

Specific learning difficulties as a category is rather new. Initially, Samuel Kirk used the term "learning disabilities" (Kirk & Bateman, 1962), and it became generally accepted at a conference, where specialists argued the issue (Kirk & Becker, 1963). However, the syndrome under different terms was described as early as the 19th century.

Morgan (1896) referred to "congenital word-blindness", while Hinshelwood (1917) defined word-blindness as a pathological condition due to a disorder of the visual centers of the brain, which produces difficulty in interpreting written language.

The Hungarian psychologist Pál Ranschburg – whose work is still in advance of what is currently carried out in dyslexia research, though his findings are still largely unknown – described *legasthenia and arithmetimia* (Ranschburg, 1905). He worked out the theory on homogeneous inhibition, which was an important point in the understanding of memory and its mistakes (Ranschburg, 1939).

The principle of homogenous inhibition (or Ra-effect, named after its describer) says that the more different the adjoining contents and processes of the mind are, the less they interfere with each other's development. Processes according to the degree of the uniformity endeavor to merge into a joint unit. This phenomenon operates, among others, in our perception, speech and in our memory errors.

Word-blindness, the specific reading difficulty, is called dyslexia in the literature now. If it is caused by a known injury, it is called acquired dyslexia, in contrast to the case when there are no diagnosable neurological injuries, and the syndrome is caused by hardly identifiable congenital differences in the nervous system. In this case the term we use is developmental dyslexia (Chase & Tallal, 1992).

Of the different types of SLDs, dyslexia has received the greatest attention. Most of the studies on SLDs deal with dyslexia, though there are many different types of SLD. The child whose development is normal otherwise, but the acquisition of speech seems to be difficult, suffers in developmental speech disorder. Similarly, developmental writing, counting and conduct disorders represent deficits in the given area.

Abbreviated as ADD or ADHD, attention deficit/hyperactivity disorders are related in their origin and in some of their symptoms to the above mentioned syndromes (there is a neurological disorder in the background, and SLD can be concomitant), yet usually they are treated separately from other SLDs, and they are considered more of a medical than an educational problem, as medicine is an important factor in its cure. However, behavior

therapy and appropriate child-rearing methods get more and more role in the treatment of ADHD.

ADD is underdiagnosed, because it causes fewer behavioral problems. Attentional deficit is often considered SLD, because it causes mistakes in reading, writing and counting. The characteristics of the mistakes help the differential diagnosis. In case of ADD, the mistakes are not consequent, as in SLD.

Trends in the research and the therapy of specific learning difficulties

There are some main trends in the research of the syndrome according to the researchers' viewpoints. Different trends highlight different aspects of the concept:

Neuropsychological theories represent the first widely accepted theory. Neuropsychological approaches describe various brain injuries that may cause the problem. Children with SLD show symptoms that are very similar to symptoms of persons with cerebral lesions.

The idea that SLD is a result of minimal brain injury is based on the similarity between the symptoms of children with SLD and brain injured persons. The injury is slight enough not to cause general mental retardation, thus it has only selective consequences. The name POS (psycho-organic syndrome), which referred to the symptoms of this specific brain injury, became generally used very quickly, especially in the German language area. This expression, emphasizing the psychic factors as well as the organic symptoms, drew attention to the need of psychological intervention.

Specialists have drawn attention to the fact that the early injury of the brain does not lead to local deficits, but causes unusual processing. According to Wewetzer (1959), brain-injured children are characterized rather by the deficits in processing, control and arousal, than by deficiencies in whole functions or difficulties in isolated, well-defined functions.

Wolfensberger-Haessing (1985) analyzes a less known weakness of children with POS, which causes learning problems. The learning and memory difficulties of 'serially weak' children are caused by the disability of storing successive information. These children have serial problem because they can grasp only a limited time-Gestalt. Tasks not requiring serial time processing are solvable for them. Slowed-down speech makes the speech more difficult to understand for the 'serially weak' child, because the short time-Gestalt does not allow him to connect the next word. Rather small units and longer breaks before the next unit should be used to help these children in the processing of the information.

However, proven organic damages are very rare, thus SLD is increasingly explained by brain-dysfunctioning (Kirk & Becker, 1963). The term MCD (minimal cerebral dysfunction) arose with this change of the viewpoint. There are two approaches to this term. The "continuum notion" hypothesis argues that the seriousness of the dysfunctions is in accordance with the degree of the brain damage.

The "syndrome notion" theories attribute the dysfunctions to genetically defined biochemical deviations (Rutter, 1982). Recent findings corroborate this theory. The appearance of SLD shows familiar accumulation (Pennington, 1990; Smith, et al., 1990), and genes were found that are responsible for the deficits (Cardon et al., 1994).

As early as the beginning of the eighties, according to his fetus studies, Geschwind (1979) assumed that the temporal area of the brain develops differently in children with SLD. The brain structure of these children does not sufficiently facilitate verbal processes, more precisely, they are not inclined to acquire reading, writing, and other verbal abilities. Geschwind found a poor inclination for drawing or singing analogous, which are more widely accepted disabilities, and nobody assumes neurological dysfunctions behind these difficulties.

The *perceptional and perceptual-motor* theories can be classified in three groups according to the dysfunction emphasized.

Some specialists deal only with perception and its deficits. They do not examine the background factors, they deal with the adjustment of perceptional deficits, and try to work out methods and programs to improve the weak abilities (e.g. Frostig).

Theories emphasizing the role of visual-motor integration and eye-motion consider the deficit of eye-movements and the balancing system to be the cause of SLD. For more information on these theories, see, for example, the work of Rayner (1983).

The *perceptual-motor* theories consider the insufficient integration of the perceptual-motor functions to be the cause of the learning problems (Hallahan and Cruickshanck, 1973). Insufficient integration of the perceptual and motor system causes that the visual processes cannot provide well-structured patterns for the motor activity.

Ayres (1972; 1979), among others, also considers sensory-motor integration to be the cause of SLD. According to her therapeutic conception, a continuous interaction must be built between the sensory input and the motor output. Her program is to develop adaptive behavior with the help of tactile, vestibular and proprioceptive stimuli in children with SLD.

Brigitte Sindelar considers the proper functioning and synergy of the part-abilities important. Her program aims to develop the sensory-motor

system (Sedlak & Sindelar, 1993). The program is based on Affolter's three dimensional perception-developing model (Affolter, 1972).

The model describes the development of higher cognitive functions. The visual, auditive and tactile-kinesthetic perception leads to the superior abilities through three cognitive areas: memory, perception and attention, and on three different developmental levels: modality specific, inter-modal and serial processing. The achieved higher abilities make the acquisition of reading, writing and counting possible. A deficit on any point of this trestle-work may be the impediment of the development of the abilities and cause SLD. Sindelar's assessment methods are to discover these weak points, and the exercises strengthen or restore the problematic part-abilities.

In the eighties, Katalin Porkolábné Balogh started a wide-ranging research on early identification and prevention of SLD, which she considered most important. As the sensitive period of the sensory-motor functions is mainly the nursery period, she focused on nursery school children. She worked out a program which can be involved in nursery activities. The program develops sensory and kinesthetic sensation of children on an enhanced level (Porkolábné Balogh, 1981; 1992).

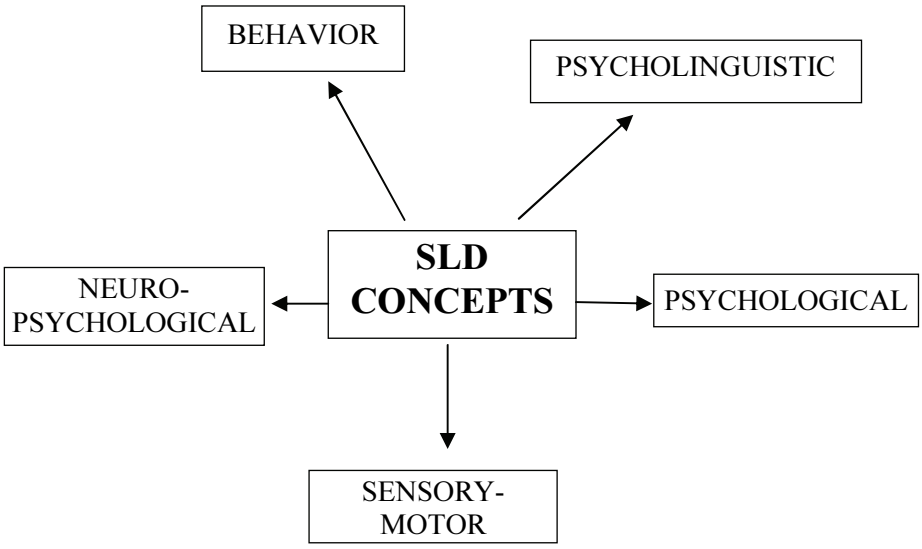
There are approaches dealing with the *psychological* aspects of SLD. Kirk (Kirk & Bateman, 1962), and Ranschburg (1905, 1939) described SLD as a special learning problem.

Psycholinguistic theories attribute learning and behavior problems to abnormal psycholinguistic processes. According to Francis-Williams (1970), difficulties in articulation can indicate problems likely to arise later. For example, she experienced with many children who later developed SLD that they did not use language as a symbolic function. Based on such theories, developmental programs were worked out to decrease the linguistic disadvantages. Dyslexia prevention and therapy was built on psycho-linguistic bases in Hungary. Meixner and her colleagues used linguistic improvement to prevent and treat dyslexia (Meixner & Justné Kéri, 1967; Meixner, 1974).

Behavior theories consider SLD a kind of behavioral abnormality, and they refuse to deal with the background factors. They consider behavior therapy the most appropriate treatment. They only deal with the symptoms, though the treatment of impulsivity and attention deficit brought very little success. This way the right behavior treatment with the total ignorance of the basic causes is questionable.

As we have seen, different approaches concentrate on different factors. Neuropsychological and perceptual-motor theories deal with the biological and physiological aspects of SLD. Psychological theories emphasize problems with learning, psycholinguistic theories blame the deficits in

language use and low level of linguistic abilities. Behavioral theories consider SLD a disturbance that is due to environmental factors.



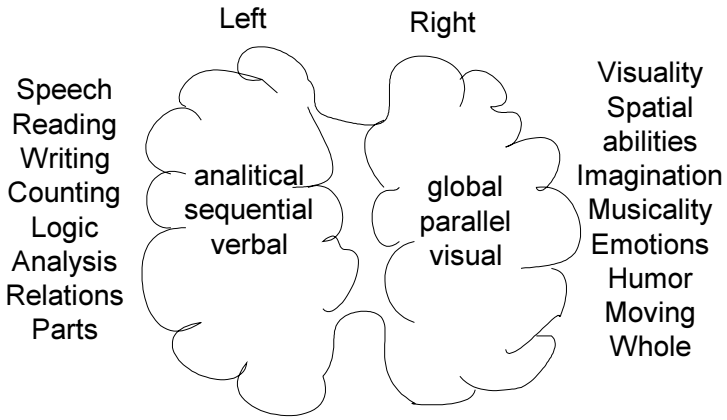
The factors of neurological background, sensory-motor abilities, literacy skills and environmental influences differ in emphasis on different factors in different ages. Thus the emphasis of the treatment changes with the age.

	Sensory-motor abilities	Literacy skills	Learning and teaching style and methods
Age 3-8			
Age 7-13			
Age 13-			

There are three areas of the treatment that should be considered in practice. All the three have some importance in the treatment. In nursery age the developmental work should focus on sensory-motor abilities. In the school years, the literacy skills are in the focus. From secondary-school age the learning and teaching styles and methods should constitute the main part of the treatment.

Our definition of specific learning difficulties

SLD is a neurologically based delay or deviant development in literacy skills. It is independent of general intelligence. Usually, the overfunctioning of the right hemisphere of the brain causes the dysfunction.



Analytical thinking (function of the left hemisphere) and global thinking (function of the right hemisphere) could be equally effective in problem solving on a higher level of thinking. However, the school prefers analytical, step by step information processing, which is the function of the left hemisphere. That is why those mainly using their right hemisphere and this way a holistic approach are disadvantaged and called persons with SLD. However, specific learning difficulties mean a specific way of thinking, which does not mean disability.

There are two types of SLD: acquired and developmental. Acquired SLD stems from mild neurological injuries, called MCD. Developmental SLD develops on a genetic base. However, the proportion of those suffering from SLD is increasing due to environmental causes. On one hand, as medicine has developed, more and more children with less severe syndromes can be saved and kept alive, and they are able to live normal lives. Though they are likely to develop SLD, education should help their further development.

On the other hand, nowadays, as multimedia is so advanced, children are provided with full visual experience. They do not need to use their imagination, as they have to when listening to the tales their parent read or they hear from the radio. The more visual environment hinders the integration of the different perceptual modalities. The environment does not help to compensate for deficiencies in particular sensory domains, so the genetic base is more likely to affect their school achievement.

Specific learning difficulties in practice

In the first two-three years of primary school, the practicing of reading and writing and other literacy based activities should be supplemented with games, which develop basic sensory-motor abilities. From the age of 6-7, more and more the preparation for reading and writing has to be part of the development, and more paper-pencil tasks are necessary.

At the age of 8, the sensitive period of the sensory-motor abilities is about to end. The focus of the remediation should turn to the specific literacy skills, but the sensory-motor abilities can still be developed. Thus developmental games and exercises can be useful at this age, as well.

From the age of 12-13, mainly the right learning and teaching methods are helpful. Techniques that use the whole-brain approach, giving visual as well as verbal materials, are appropriate for effective learning.

Nursery and primary	Body scheme, spatial orientation, sense of balance, fine movements, perception, seriality
Primary and secondary	Phonological abilities, visual abilities, vocabulary, counting, spelling, reading
Secondary and higher	Complex learning techniques: mind map, visualisation, drama, experience based education

Techniques in the treatment of specific learning difficulties in the classroom

Individual educational plans can be developed for those suffering from SLD. There are some techniques that can be particularly helpful for them. Furthermore, everyday teaching in the classroom should be more SLD-friendly, as well.

Here are some hints, how the teacher can help children with SLD in the school:

- Spelling rules, reminders, associations and other little tricks give aid for good spelling.
- It is inappropriate to just underline the spelling mistakes. Teachers should always correct the spelling of children with SLD. Children should not see the incorrect version, because it leads to confusion.

- Children with SLD should regularly write short copying of interesting text. First little jokes, stories, later short news of the child's interest can be copied.
- Children with SLD need more time for learning by heart. Teachers should consider it.
- Tape recorder, computer, spell checkers and any other devices that can help the child should be used.
- It is very difficult for these children to learn foreign languages, but they can acquire languages through communication, talking and other social activities. Videos and tapes are good aids.
- Children with dyscalculia use different visual aids for counting. Teachers should support it, rather than forbid it.
- For example soroban can be a good device to learn counting.
- Children with SLD should be allowed to use their aiding devices also during the tests.
- Complex tasks are proper to teach systematic thinking.
- Mind Mapping should be taught for children with SLD. Mind Maps help a lot in studying, essay writing, organizing thoughts. Visualization and finding relevant concepts give detailed understanding.
- Reading syllables and non-words helps children to pay attention to the sequence of letters and become aware of the linguistic rules.
- Using children's own favorite books for reading enhances motivation for reading.
- Reading aloud is essential for dyslexic children.
- Reading in pairs can help to go through difficult words.

Reading aloud

One of the most important elements of the prevention of SLD and its secondary deficiencies is reading aloud.

Parents should sing and recite poems from early age, already in infancy. The baby can perceive the melody and rhythm of the language, and it helps to develop the verbal skills. From the age of two, short tales and stories can supplement the songs and nursery rhymes. Beyond the developmental effect, reading can make the atmosphere of the bedtime pleasant. Reading aloud should be an everyday program in the nursery and primary, too. Teachers can read tales and stories at the beginning of the day and/or after lunch. 'A tale for every day' should be the rule for the families and schools where little children are reared.

Reading aloud has a many-sided effect. Not only the child's vocabulary will develop, but the child can also learn the literary language, the phrases

and idioms of the written language. Oral and written language are different, therefore, when the children start to learn to read, if this is the first time they meet the oral language, it is like they have to acquire a new language.

Another developmental effect of reading aloud is that the child has to follow the sequence of the events. This way, he/she has to create his/her own image about every element of the story, without or with very little visual support. That way the child's successive information processing and the ability to form own images can develop. Those children to whom the parents read aloud regularly will read significantly better than those who hardly have the possibility to listen to tales and stories.

There is a third effect of reading aloud, which is at least as important as the former two effects: it is that the child will learn that reading can be fun. The TV, video and computer are very important, and with appropriate use, they are very useful elements of the child's world, but they are rivals of books. The child has to learn very early that reading gives a wonderful experience, and literary experience differs from the sensations that imaging devices provide. After the need for literary experience developed, the child will be motivated to read. Otherwise the easy-to-acquire sensations will turn the child away from reading.

Reading aloud should be continued even after the child has learnt to read. Poor reading skills will frustrate the child, and so the child will not enjoy the literary experience, and may lose interest in reading. It is the best to continue reading aloud until the child can read short novels alone, too. It means that regular reading aloud should not be stopped before the child is 8-9 years old.

Cognitive training

Right hemisphere dominance has many advantages, like having a good overview of things, good visual abilities, holistic approach. However, systematic thinking, analytic abilities and verbalization may be poor. These areas are important developmental parts of the treatment.

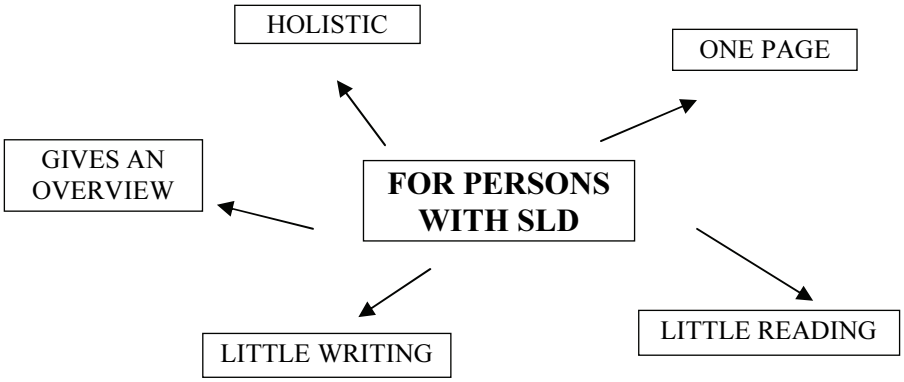
Areas like arts, acting techniques, in which persons with SLD can be effective, are useful elements of the cognitive training. Projects, organizational tasks, teaching other children, acting, technical descriptions, categorization and analysis of art works, observing natural elements like stones and seeds are proper activities for the training of cognitive abilities.

As persons with SLD have less affinity to details, they have to learn to concentrate on parts of the words, like letters and syllables. Instead of guessing from the picture of the word, they have to learn to analyze the words.

One of the most effective methods of teaching literacy skills is the Meixner-method. It uses letter-reading and differentiation, reading syllables and non-words. It helps to differentiate similar elements by analysis, enhances concentrating on details, and increases the vocabulary of the inner lexicon.

Mind Map

Mind map is a useful tool to learn, to memorize, to organize studying material, and has several other uses. It is advantageous for anybody, but especially for those who have deficiencies in the literacy skills. Mind maps do not cure dyslexia or other deficits. They are just a way of processing material, organizing thoughts and ideas in a very effective way.



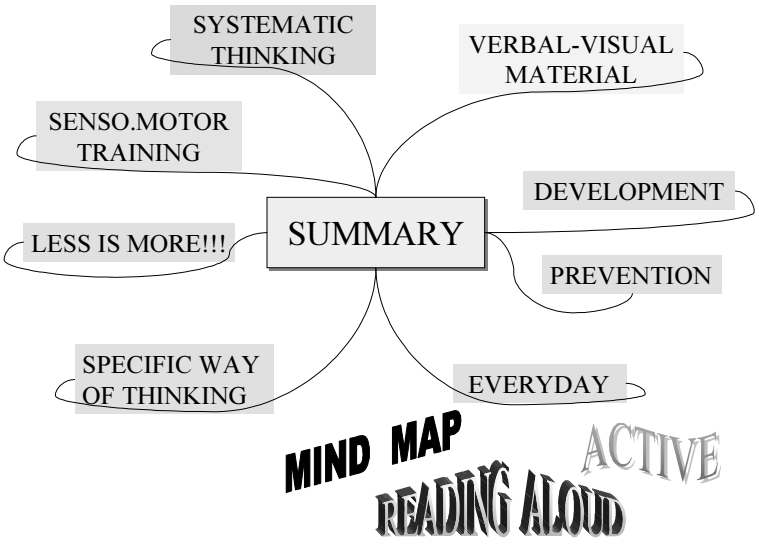
Traditional western education prefers left hemisphere functions. Therefore, those who have good verbalization skills and can process information in a sequential way, are at an advantage in the school, whereas those whose information-processing is rather visual and have global thinking, often feel uncomfortable in the current education. Most of the underachievers are visual and are global thinkers. However, these persons can be very successful in real life.

The whole-brain approach means that we use tools that activate as many functions of the brain as possible. This way, learning and all other cognitive functions will become far more effective than by using only one way of information processing. Mind maps are good tools of the whole-brain approach. You can create mind maps with A pen or pencil and paper. However, a computer program designed to create mind maps can also be very helpful.

Summary

Specific learning difficulties can be considered a specific way of thinking. Therefore it can be called specific teaching difficulties, because persons with SLD need ways of teaching that fit their abilities.

Appropriate teaching has to give more emphasis to sensory-motor training, has to develop systematic thinking, has to use analytical methods to acquire literacy skills, and has to prefer both visual and verbal information processing in learning.



There are methods that are good for teaching persons with SLD. Reading aloud, projects, Meixner method, mind mapping and other ways should be used in the everyday teaching. Active participation in learning gives deeper understanding, because when children act, they use their own way of thinking.

Two types of support have to be considered in any solution of the teaching of SLD persons. On one hand, underfunctioning abilities have to be developed, and on the other hand, further losses and secondary symptoms have to be stopped.

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MELINDA GYENEI

THE DEVELOPMENT OF PSYCHIC FUNCTIONS WITH STRESS ON LEARNING ABILITIES DURING PRESCHOOL YEARS LEARNING DISABILITIES PREVENTION – THE CHARACTERISTICS OF THE COMPLEX KINDERGARTEN EDUCATIONAL PROGRAMME

In memoriam Katalin Porkoláb-Balogh

Children's psychic abilities are of utmost importance when reaching school age. These abilities depend on the development of perceptual and perceptuo-motor functions, which determine learning abilities. Although the sensitive stage for the optimal development of these functions falls between the ages of 3 and 6, the backwardness in certain functions and their developmental heterogeneities can be compensated for in the initial phase of the lower grades.

CHARACTERISTICS OF DEVELOPMENT

The concept of 'growth' is usually used to refer to physical growth, which forms the basis for behaviour changes.

The term 'maturation' refers to a genetically determined sequence of physical growth changes that influences the development of behaviour in an orderly way, and is relatively independent of learning or experience. It provides a 'readiness to learn' certain skills at a particular time.

Distinguishing features of behaviours based on maturation are relatively fixed sequences of events, such as the sequence of gross motor development in the first year of child's life, e.g. sitting, crawling, standing, then walking.

There is a sequence of development within each developmental field. These are: motor (or gross and fine), communication, self-help, adaptive (or intellectual) and social-emotional. Development in one field does not necessarily run parallel with development in another. For example, a child with cerebral palsy may be late in walking but average in manipulating objects and intellectual development. The rate of development is not

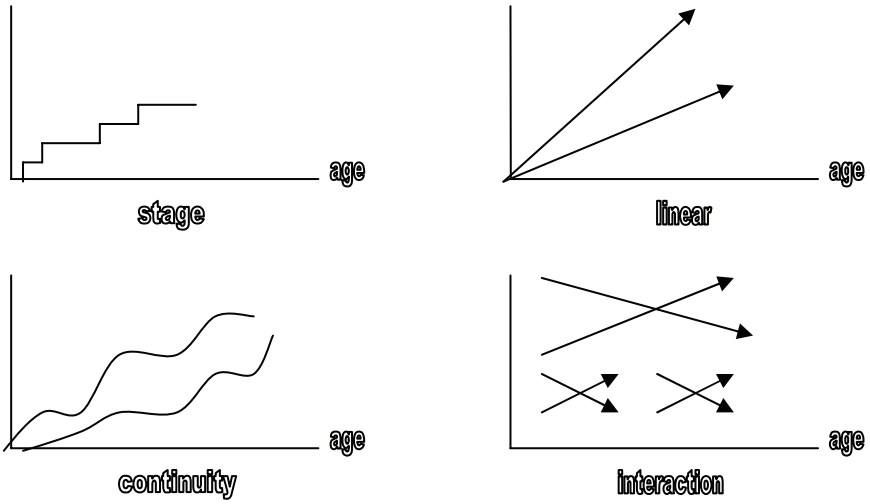
constant. Sometimes there is an overall slowing down of development across all domains, which results in abnormal functioning.

There are other principles of development shown in the regular ways in which physical and psychological competencies change from simple to more complex behaviours. The first principle is that behaviour becomes increasingly controlled with age.

Conceptual models of development:

1. The 'Stage model' views development as occurring in step-like growth, discontinuous stages, each of which is qualitatively different from earlier ones. They follow a particular order, which is universal for all children.
2. –3. The 'linear' and 'continuity models' both view development as constituting incremental growth. The Continuity approach sees the increments as being more variable over time, reflecting growth at different rates at different ages. Developmental changes are primarily genetically programmed and directed by processes of maturation.
4. The 'interaction model' views development as the product of individual characteristics interacting with environmental influences. The factors in the individual and environmental development, and the ways in which they reciprocally influence each other may well differ at different points in the age of a child.

Table 1.



On the basis of Janet Empson and Dabie Nabuzoka (2004).

All models conceptualise developmental changes as occurring at different rates in different individuals, with variability about an average for the achievement of each skill or competence.

Development of Basic Aptitudes during Preschool Years

Early childhood, which we consider to occur between the ages of two and six, is typically a period of rapid physical, cognitive, and emotional growth. For example, during this time, children usually acquire the ability to feed and toilet themselves, ride tricycles, draw pictures, speak in complete sentences, and play "appropriately" with other children. The abilities or skills underlying such tasks are the result of a complex interaction of a child's inherited and acquired characteristics with the environment.

Areas of Development

1. Motor skills development

Babies do not have to be taught the basic motor skills; they just need freedom from interference. As soon as their nervous systems, muscles, and bones are mature enough, and if they have enough room and freedom to move, they keep surprising the adults around them with their new abilities. As soon as they learn one new skill, they keep practising it and getting better at it. Each newly mastered ability prepares the child to tackle the next one in the preordained sequence of motor skills.

Two of the most distinctively human motor capacities are the ability to walk on two legs and the precision grip, in which the thumb and index finger meet at their tips to form a circle.

Early childhood is a time of great leaps of motor development.

a./ Gross motor skills development

The years from two to six are considered the "golden years" for motor development (J.C. Witt et al., 1994). During this period, most children acquire a basic repertoire of manipulative and locomotor skills, develop goal-directed motor behaviours, and learn to connect two or three movements in sequences. The major gross motor skills to be developed during these years are:

- body projection (Typical body projection skills include running, jumping, hopping, skipping, and sliding. All require coordination among large muscle masses to move one's total body.),

– body manipulation (Body manipulation skills involve moving one's body or body parts in a well-defined but small area. Typical body manipulation skills include stretching, curling, rolling, bending, and balancing),
– object manipulation. (Object manipulation universally observed in young children includes throwing, catching, striking, kicking, and ball bouncing).

It is not uncommon for this array of gross motor skills to be developed in preschoolers at a different rate.

b./ Fine motor skills development

One of the most important aspects of fine motor coordination that develops during infancy is visually guided reaching. It develops around 4 months of age and allows infants to explore their world much more effectively. A primitive neonatal form (visually initiated reaching) is largely governed by biological factors and is relatively impervious to environmental deprivation. The 4-month form requires that infants experience visual feedback from their reaching movements. Later in the first year reaching again changes and in a more practiced form demands less visual attention.

Fine motor skills involve control over fine muscles. In regards to school functioning, these skills primarily involve eye-hand coordination. Three-year-olds will have made big gains in eye-hand and small-muscle coordination. This is clearly obvious in tasks such as drawing, colouring, cutting, and manipulating small objects. The skills required to accomplish these tasks successfully range from fundamental to more complex visual-spatial or perceptual-motor abilities, which in turn are important indicators of readiness for reading and writing.

I have provided a table to illustrate a typical pattern of perceptual-fine motor skill development during the period from two to seven years.

Table 2. *Typical Perceptual-Fine Motor Development in Children from Two to Seven Years Old*

2 years	**2 J**
Rotates forearms, turns knobs	Grasps too strongly with overextension
Turns pages one by one	Places blocks in form-board with no
Strings several beads	demonstration
Unwraps piece of candy	May imitate H in drawing
Imitates vertical strokes	Imitates horizontal line
Crudely imitates circular strokes	Holds crayon with fingers
Imitates V strokes	Builds 8-block tower
Aligns 2 or more blocks for a train	Adds 1-block chimney to block train

Makes 6-7 block tower
Can mach 2 or more simple shapes
Places blocks on form-board separately with demonstration

3 years

Good rotation of wrist
Builds 9-10 block tower
Imitates cross
Copies circle from a model
Cuts with scissors
Matches 3 color forms
Puts on socks and shoes
Undoes medium shirt buttons
Places 10 pellets in bottle in 30 sec (1 at a time)

4 years

Throws overhead
Cuts with scissors
Copies cross from a model
Draws crude pictures of familiar things
Builds with large blocks
Copies a diagonal line
Buttons up large size buttons
Knows front from back on clothes
Brushes teeth
Places 10 pellets into bottle in 25 sec
Performs serial opposition of thumb to fingers

5 years

Holds objects precisely and releases well
Tries to color within lines
May copy an X
May copy a triangle
Enjoys coloring, cutting, and pasting
Puts on and takes off shoes without tying
Can dress and undress alone except for small buttons and bows
Draws a house with windows and doors
Draws a person with arms, legs, feet, and facial features

Matches 1 colour form
Dries own hands

3 J

Traces a diamond
Builds 3-block bridge from a model
Washes and dries hand and face
Can eat alone properly
Matches simple colours

4 J

Copies a square
Draws a person with several body parts
Draws pictures of familiar objects
Identifies simple objects by feel-and-touch, such as ball, block, or crayon
Catches a bounced ball
May name several colours

6 years
Ties shoelaces loosely in a bow
Throws and passes a ball
Can print some letters and numbers (may be reverse)
Draws person with deteailed body parts and some clothing
Imitates inverted triangle
May imitate horizontal diamond
Bottons up small buttons on a shirt or a blouse
May know right and left on shelf
May have a stable hand preference

7 years
Copies a Maltese cross
Cuts with knife
No longer has letters b and d confusion
Draws human figure with clearly represented clothing

J = means the skill/behaviour is *just* beginning to appear.
On the basis of Bruce A. Bracken (1991).

1. Perceptual Processing

Perception and action complement each other. No action could exist without perception and perception relies ultimately on action. Together they form functional systems around which adaptive behavior develops. Perception and action are mutually dependent.

Perception is the meaning or interpretation of information received through our senses. The way we perceive something depends primarily on two things:

– The physical features of a stimulus and
– The way we organize information.

Because there are five senses, there are theoretically five types of perception. In school settings and in perceptual-motor testing, two types of perception are emphasized: visual perception and auditory perception.

Physical features of visual stimuli can vary in the dimensions of size, shape, colour, clarity, and complexity. Physical features of auditory stimuli can vary along dimensions of pitch, loudness, complexity, and similarity/dissimilarity of sounds. Organization of sensory information

depends on quantity and quality of stored information and concepts as well as an individual's level of cognitive development.

A normal child develops the ability to perceive and act upon increasingly complex perceptual stimuli over several years. Visual and auditory information from the environment is received by the child's sensory system and must be neurologically transmitted and interpreted. Such processing of information requires a well-coordinated, intact neurological system. The typical preschool child will not have fully developed information-processing capacities and thus may have difficulty copying with simple shapes (e.g. triangles, squares, diamonds), distinguishing left and right consistently, discriminating between letter symbols, or blending sounds together to form words.

Perceptual-processing difficulties are not easily distinguished from other developmental areas because the perception process is prerequisite to the functioning of virtually all behaviour. Auditory perceptual processes are central to receptive language, and visual-motor processes are essential to fine motor and gross motor functioning.

In most cases, poor perceptual processing results from developmental immaturity and limited stimulation. (A very small percentage of preschoolers have some fundamental dysfunction in their neurological system and do not benefit from increased stimulation experiences.)

2–3. Attention span

A critical aspect of perception is selective attention. Selective attention refers to the ability to select from an array of competing stimuli those stimuli that are relevant to the task at hand.

Attention is a complex concept and teachers frequently refer to it during instructions. The ability to apply persistent concentration over a period of time depends upon intact cortical and subcortical brain function.

Attention is multimodal. It can move within a modality, such as from one visual stimulus to another, or between modalities.

It is all very well to talk about attention deficit but what constitutes a deficit, a deviation from the norm that is disabling? Many factors will affect how well a child attends: the type of activity, what has preceded the activity throughout the child's day, and the child's level of interest in the task.

Call (1985) estimates that a developmentally appropriate length of attention for a sustained attention activity, such as viewing television, is as follows:

2 years old: 7 minutes
3 years old: 9 minutes
4 years old: 13 minutes

5 years old: 15 minutes
6 to 7 years old: 60 minutes

These times are presented as guidelines only; children vary greatly in their attention span. However, children with attention disorders will find it challenging to maintain attention on a structured task for lengths of time.

Cooke and Williams (1987) outlined six levels of normal development of attention control. These levels may be used to assess the child's development of attention skills.

Table 3. *Levels of Normal Development of Attention Control*

- *Level 1 (birth to 1 year).* Level 1 is characterized by extreme distractibility, in which the child's attention shifts from one object, person, or event to another. Any new event (such as someone walking by) will immediately distract the child.
- *Level 2 (1 to 2 years).* Children in level 2 can concentrate on a concrete task of their own choosing but will not tolerate any verbal or visual intervention from an adult. Their attention is single-channelled, and they must ignore all extraneous stimuli in order to concentrate upon the task at hand.
- *Level 3 (2 to 3 years).* Children's attention is still single-channelled in level 3. They cannot attend to competing auditory and visual stimuli from different sources. For example, they cannot listen to an adult's directions while playing but with the adult's help, they can shift their full attention to the speaker and then back to the game.
- *Level 4 (3 to 4 years).* The child in level 4 must still alternate full attention (visual and auditory) between the speaker and the task, but now does this spontaneously without needing an adult to focus that attention.
- *Level 5 (4 to 5 years).* By level 5, attention is two-channelled; that is, the child understands verbal instructions related to the task without interrupting the activity to look at the speaker. The child's concentration span may still be short, but group instruction is possible.
- *Level 6 (5 to 6 years).* In the final stage, auditory, visual, and manipulatory channels are fully integrated, and the child's attention is well-established and sustained.

From Martin Herbert (2003), *Typical and Atypical Development. From Conception to Adolescence*. BPS Blackwell.

Attention and perception play a crucial role in solving many cognitive tasks. Selection and control of attention are a prerequisite to succeed in those

tasks in which the essential elements must be distinguished from the inessential ones. Perception is basic for activities such as categorization, which is essential to introduce a given order in the informational diversity.

The important role of attention and perception is easily seen in activities such as reading, language comprehension, spatial orientation, and habit formation. Both processes – attention and perception – make great progress during the preschool period. Preschoolers have difficulty in voluntarily focusing their attention on specific aspects and get easily distracted when other stimuli are presented. They are slower and less precise than older children when they have to block their attention to discard non-pertinent stimuli. Also, when they look at a complex stimulus, their exploration process is neither systematic nor complete.

4. Language

Language abilities can be divided into receptive language and expressive language. Receptive language involves the ability to understand what is said and is often assessed in young children by observing motor responses such as nodding or pointing. Expressive language requires speaking and involves knowledge of syntax and grammar. It is assessed by analyzing language samples on dimensions of sentence length and complexity, word use, and grammatical features. In general, oral expressive language abilities develop later than receptive language; children thus often understand the meaning of a word long before they say that word.

Speech/Articulation

Although speech and language are highly related, they are distinct aspects of verbal communication. Speech involves the generation of sound in a coherent pattern. It is the process of using language. Important components of speech are articulation (formation of sounds), voice (pitch and intensity of vocal production), and rhythm (integration of sounds in a comprehensible manner).

In the preschool years, the assessment of speech is at a basic level. Minor articulation errors are common. The most active period of speech-sound development is from 18 months to four years, by which time all the vowel sounds and many consonant sounds are mastered by normal children. Acquisition of vowel sounds is normally completed by age three, whereas all consonant sounds often are not accomplished until age eight.

5. Cognitive skills

In general, cognition encompasses a wide range of mental abilities. In practice, subsets of cognitive abilities, namely attention, memory, comprehension, and reasoning, are of primary concern to educators and psychologists. Activities such as classifying objects according to colour, shape, or size; identifying similarities and differences; repeating phases or sets of numbers; and naming letters and numbers are examples of tasks requiring basic cognitive skills.

During their first year of age, babies do not seem to be interested in images at all. The same applies to other symbols displayed in different formats. They treat them like any other object, more or less interested depending on their intrinsic properties. It is not until the second half of the second year that symbols are seen differently because they become representative objects. At the end of infancy, at around 18 months, there is a qualitative change in children's cognition.

One of the most important milestones in preschool development is the possibility to understand and use symbols. As Vygotsky said "Symbols expand the realm of thinking by enabling children to represent, draw inferences from, and make predictions about objects and events they have never directly experienced".

Children's interest increases as they begin to interpret simple graphic images. They become aware that symbols have a meaning that goes beyond their physical properties. Symbols represent something that is absent. The comprehension and use of symbols progress spectacularly during the preschool period, setting up an essential basis for most school learning and facilitating children's adaptation to the cultural context. The symbolic relationship is never totally transparent. Its interpretation requires a long elaboration that involves other people capable of making that interpretation. In spite of the fact that the first intuition that something stands for something else may be an early acquisition, younger preschoolers may demonstrate symbol-referent confusion. This confusion is present in both the iconic and the arbitrary symbols (writing or numerical notations).

One of the main characteristics of the human mind is its limited capacity to choose and select information. Preschool children's cognitive skills are claimed to depend on many factors and cannot be considered homogenous. The cognitive differences between a 4- and an 8-year-old child would depend on how the processing limitations were overcome. This should depend on factors related to the task and previous experience.

In contrast to infants, preschool aged children's cognition is much more comprehensive. The preschooler's method of reasoning is not always logical,

their explanations are often subjective and there is a lack of stability in their knowledge.

Memory

In the most general sense, memory is the ability of living organisms to store and use past experience. Thus all learning implies memory. Regardless of how broadly one defines memory, it can be described as involving three processes:

- Encoding, or acquiring and organizing elements of experience through perceptual and cognitive processes.
- Retention, or storage of the acquired elements.
- Retrieval, or location and extraction of retained elements.

Retrieval is usually achieved by way of cues, which are stimuli that initiate and guide the search for stored elements. The most basic form of retrieval is recognition, in which the cue is a reoccurrence of the stored item.

Newborns and even foetuses have limited memory, and capacity for memory develops rapidly over the first year. What is remembered and for how long changes rapidly over the first year. Cuing is important for retrieval. Both encoding and retrieval become more advanced in the period from 8 to 18 months, but become abstract only at the latter time. A transition to still more advanced processes (meta-memory and mnemonic devices) takes place around 2 years.

Language organizes events. Tessler and Nelson examined 4-year-old children's memories of a visit to a museum as a function of what the mother and child talked about as they toured the exhibits. Children did not recall anything about objects or activities that were only mentioned by the mother or the child. But objects, activities or any information jointly discussed were recalled only.

Age differences in the capacity of short-term store were typically found in developmental studies that used memory span tasks. (Such tasks require that participants must repeat, in exact order, a series of rapidly presented items such as digits or words.) Age differences in memory span are very stable. Dempster (1981) reported that the memory span of 2-year-olds is about two items; of 5-year-olds about four items; of 7-year-olds about five items, and 9-year-olds about six items. The average memory span of adults is about seven items.

Educational readiness

School readiness subsumes a wide range of skills and behaviour related to success in school. School readiness primarily cuts across areas of cognitive,

language, and fine motor development. Skills or behaviours typically considered important to school readiness include copying shapes and figures, identifying numbers and letters, knowing left and right orientation, and understanding basic concepts such as same-different, top-bottom, first-last, and before-after. Most educators believe attentional abilities and interpersonal characteristics such as working and playing cooperatively and following teachers' directions are also important prerequisites for success in school.

As for cognitive – intellectual – readiness, educational psychologists are concerned not only with the problems of "what" and "how" to teach but also the problem of "when" to teach this or that. School readiness is an essential question for educational psychologists, teachers, parents and children. In Hungary for children who are tested for school readiness before entering the first grade, psychologists have to differentiate between "general developmental readiness" and "subject-matter readiness". *General developmental readiness* in the developmental sense of the term "readiness" describes general cognitive maturity which mostly depends on changes in intellectual functioning related to age-level. Age level related changes in intellectual functioning influence learning, retention and thinking processes have been identified in some areas of cognitive functioning, for example: perception, subjectivity-objectivity, structure of knowledge and problem solving. *Subject matter readiness* depends mostly on previous learning and experience. Social factors, such as home environment, SES (social economic status) and attentive parents are the most important factors of subject-matter readiness. The effects of nurseries can compensate to a certain degree for a disadvantageous early environment. In Hungary most children go to nursery-school at least one year prior to entering the first grade. Most of them spend 3 or 4 years before starting school-learning.

School readiness means much more than cognitive readiness. Personality factors, e.g. the development of dependency, anxiety or insecurity and aggression are also important.

Before children can learn to write they must develop certain skills: e.g. eye-hand coordination, sequencing abilities, memory. To learn to read, children need visual and auditory discrimination ability and memory, the ability to see relationships and to learn from repetition and ability to concentrate.

How do writing skills develop?

Children's writing emerges out of their early scribbles, which appear at around two to three years of age. In early childhood children's motor skills usually become well enough developed for them to begin printing letters and

their name. As they develop their printing skills, they gradually learn to distinguish between the distinctive characteristics of letters, such as whether the lines are curved or straight, open or closed, and so on. Through the early elementary grades, many children still continue to reverse letters such as b and d and p and q (in Hungarian letter g). At this point in development, providing other aspects of the child's development are normal, these letter reversals do not predict literacy problems.

Like becoming a good reader, becoming a good writer takes many years and lots of practice.

What are some developmental changes in the way children think about mathematics and their math abilities at different ages?

Children already have a substantial understanding of numbers before they enter first grade. Most kindergartners can accurately count the number of objects in a set, can add and subtract single digits, and know the relative magnitudes of single-digit numbers (e.g. that 8 is greater than 6). Understanding basic aspects of number is critical in kindergarten through the second grade (e.g. at these grade levels, children need to learn the base-ten numeration system; they must recognize that the word *ten* may represent a single entity or ten separate units and that these representations can be interchanged). Children enter the elementary school with different levels of mathematical understanding.

Learning Disabilities

H. Werner and A. Strauss worked with mentally retarded, autistic, and brain-injured children in the 1940s. Central of Werner's and Strauss's assumptions regarding learning problems were *perceptual disorders*, particularly *figure-ground disturbances*. The figure-ground disturbance refers to the tendency to confuse an object with its background. Normally, when we perceive a stimulus (e.g. a painting), we tend to focus on the main object and its details and tend to ignore much of the background. In a figure-ground disturbance, some individuals will focus on or be distracted by details of the background and ignore the figure. In other words, a figure-ground disturbance is "not being able to see the tree for the forest." This relates back to the idea of selective attention discussed earlier. That is, persons with a figure-ground disturbance tend to focus on irrelevant aspects of a stimulus (background) and not upon relevant aspects of that stimulus (the figure).

In the 1960s a new term was introduced to describe children who had no demonstrable sensory impairments and were not mentally disabled but still had difficulty learning. Kirk labelled these children *learning disabled*, and

many of their characteristics were similar to those first described in the 1940s by Werner and Strauss in discussing brain-injured children.

The term "learning disability" is commonly used to describe any learning disorder that is not the result of organic defect, low intelligence, emotional disturbance, or environmental deprivation.

A key component in identifying a learning disability in such cases is the discrepancy between a child's ability and his achievement (Nabuzoka, 2004).

It is generally recognised that the social context plays a significant role in defining developmental problems.

The child with an attention disorder is responding to too many stimuli. This child is always on the move, is distractible, cannot sustain attention long enough to learn, and cannot direct attention purposefully.

Children with learning disabilities in visual perception may not understand written words, or other visual symbols. Children with auditory perception difficulties may not be able to understand or interpret spoken language. There are many factors in the environment with which perceptually disordered children cannot cope. These include, not only elements that signify deeper meaning, but awareness of objects and their relationships to them. The disability can affect left-right orientation, body image, spatial orientation, motor learning, and visual closure (seeing the whole from presentation of a part) (Kirk & Gallagher, 1989).

The identification of learning disabilities in preschool children is directly related to behaviour on age-appropriate tasks. These tasks often involve pre-academic readiness skills (e.g. holding a crayon, cutting with scissors). Some children have trouble with gross and fine motor development. Others are slow to develop oral language and reasoning abilities. The most common disorders among preschoolers are delayed language development, poor perceptual-motor skills, and lack of attention.

According to surveys, between 5% and 15% of school-age children have learning disabilities (Taylor, 1989).

Learning Disabilities Prevention – the Characteristics of Kindergarten Educational Program for Learning Disabilities Prevention

What should we take into account in the case of kindergarten-age children?

Children change rapidly during these years. For *three-year-olds*, learning should emphasize language, activity, and movement, with major emphasis on large muscle activities. *Four-year-olds* need more variety in their activities and can begin to enjoy small motor activities (e.g. manipulating scissors). In teaching language to children, particularly *five-year-olds*, you should offer practice in a meaningful context rather than focus on isolated skills. For *six-, seven-year-olds,* cognitive growth can be fostered through hands-on activity and experimentation. Children at this age are mainly interested in games with sets of rules and can learn much by taking part in them.

P. Balogh's experiments in the last 20 years in Hungary:

1. An attempt at the prevention of learning disorders in children of kindergarten age

The experimental training program commenced at the end of '80s in the "little group" (three-year-olds) from a kindergarten in an area of block of flats in Budapest. (One "little group" from another kindergarten in the same area served as a control group. No training program was applied to the latter group, only the traditional curriculum).

In the experimental group the annual curricula of physical education and general knowledge classes were elaborated by the kindergarten teachers by taking into account those points of the training program which can be developed as a matter of course during the processing of the topics of the curriculum. The training methods were playful, relied on intrinsic motivation and, as far as possible, adjusted to the age characteristics of the children.

The training program was continuously improved during the three-year period of kindergarten education.

In the "little group" (3-year-olds) the goals of development dealt with movement and body scheme while in the "middle group" (4-year-olds) and "big-group" (5-year-olds) the goals of the program included the retention of the achievements of the previous year and the more direct development of perception, with particular emphasis on the development of space perception.

[*The experimental methods were:* procedures employed by kindergarten teachers; psycho diagnostic tests; video-recordings of the classes; repeated assessment of performance on tests a year latter in the "middle group", and two years later in the "big group"; the analysis of academic achievement at the end of the first semester, and at the end of the second semester of the first grade.]

The efficiency of the three-year training program was evaluated from two aspects:

- By the comparative analysis of the achievements on tests applied to the experimental group and the control group.
  - at the initial stage
  - half-way through the training program
  - at the end of the training program

Before the start of the training program it was expected that there would be positive and intensive changes as a result of the training.

- By the microanalysis of the experimental group's results it was possible to answer the following questions:
  - In which areas is the training program primarily efficient in developing and what length of time is needed for effective development?
  - How does the developmental effect assert itself in the case of different SES (socio economic status) levels?
  - Can we expect a significant positive change as a result of the training program in the case of children with MCD (minimal cerebral dysfunction)?

Apart from the age homogeneity of the experimental and the control group, both groups were heterogeneous, so when the effectiveness was evaluated, it was not the numerical result that served as their guideline, but rather the quality and the intensity of change as compared to the initial level of each group.

Numerical data of the evaluation research proved that as compared to the control group a more intensive positive development emerged in all areas in the experimental group which had been taking part in the training program over a period of three years.

The results of the repeated assessments pointed to very significant positive changes as compared to the initial level but this required a 3-year training period. The tendency of group performance toward homogeneousness was obvious and homogeneity of achievement approaches the maximum in the case of the body scheme, movement and organisation of visual-motor structure.

All test results of the third assessment of the experimental group surpassed the average standard level for the age group, while at the initial level there was extreme underachievement in most tests.

It had become a proven fact that the advantage in SES level made it felt in the development of perceptual functions. In this area it was the disadvantage by the low SES which was the most difficult to overcome.

It is noteworthy that as a result of the 3-year developmental training program the low SES group was capable of making up for its significant lag in the level of performance as compared to the high SES sample.

The disadvantage caused by MCD can be decreased by consciously-focused development. It continued to exist in the control group where only general development of the cognitive structures took place (P. Balogh, 1989).

2. Early screening and correction of learning disturbances

Due to the implementation of the Flexible School Entrance Age Law and emphasizing the fact that teaching reading in schools is not effective enough, it has become urgent to explore and clarify the present conditions and the situation in the field of school readiness and successful performance. It was especially important to clarify the extent to which reading disabilities are due to the psychic readiness of the child when entering school or the methods used in teaching reading are the most decisive factor.

Besides measuring school readiness, P. Balogh's goal was to adapt those psycho-diagnostic procedures to group situations which earlier had proven reliable in measuring psychic functions which determine learning ability and which had had a good prognostic value in the face of school successful performance when administered to an individual, one-to-one situation. Her reasons for trying to adapt the psychological screening procedures for use in group situations are two-fold:

- Since prevention is a central aspect of the work of school psychologists, diagnostic methods used by them are primarily targeting groups, i.e. they mainly use group screening procedures.
- Many experiments have verified the finding that results gained from tests administered in a group situation significantly differ from those gained from tests administered on a one-to-one basis in the case of same-age students. At the same time, a group situation is analogous to a pedagogical situation. Results gained from group procedures correspond more closely to what teachers experience with children; therefore school psychologists can give more realistic information and more effective help to teachers.

The school psychologists screened a nationwide representative sample of 1350 children in 56 different first grade classes of elementary schools.

The theoretical basis of the development programs and their contents (indirect methods, complexity) were the same. Altogether 60 children took part in the group developmental program.

[Pedagogical procedures and psychological testing were used in the screening of the 56 first grade classes: procedures used by teachers:

classroom observation, analysis of achievement; group screening by psychological tests: to measure attention, perception of abstract gestalts, the differentiation and recognition of letters and the copying of geometric shapes; the individual and differentiated testing of children who exhibit severe dysfunctions during the screening procedure.]

On the basis of the development of specific functions as measured by psychological methods, it could be stated that the school readiness of the 1350 first-grade children in the study was on a relatively low level; their results were dispersed on a wide range with the distribution maximum tending to be nearer to the minimum pole.

16.5 % of children entering school produced an achievement level characteristic of 4-5-year-olds in the test measuring the development of space-perception. For example, these children identified only one or none of the five abstract drawings as being identical in the Edtfeldt test which requires the judgement of form-size-whole-part and space orientation for success. This problem alone is enough for these children not to be successfully taught the precise identification of spatial-orientation, which could be taught at a kindergarten age in the most natural way, i.e. through games requiring movement. It was quite clear that these children lack the psychic readiness indispensable for school readiness.

- The average level of achievements in group-administered test situations was the same as when testing 5-6-year-olds in individual situations, but in the case of the Edtfeldt test this is equal to the performance of 4-5-year-olds. The main problem lies in space-orientation.
- Results according to residential area:
  - The average score of children residing in Budapest was better in all tests with the exception of the attention task (achievement in percentage).
  - Children attending schools in high-rise housing estates performed on a higher level of achievement on all tests with the exception of the attention task. The achievement percentage of children attending traditional schools compared to non-traditional ones is better on the tasks dealing with letters.
  - There was no decisive clear-cut positive change in performance according to age-range. Highest achievements could be found in the second range (6 years 5 months – 7 years), while 7-7-and-a-half-year-olds tend to be the most successful in copying geometric forms.

The psychic development and school readiness of children entering first grade in the elementary school were on a low level. In order to avoid this, a set of tests were used to measure school-readiness and whether it should be supplemented with tests measuring the development of visual-motor functions which provide a more reliable prognosis.

On the basis of results regarding different age-ranges, it was questionable whether it was adequate to start schooling for children who have just turned six. These children's performance was the poorest in all functions measured. The alternative of flexible school entrance was exercised mainly by parents who are white-collar workers, while children with a low socio-economic status or who were explicitly disadvantaged tend to start school on the basis of their chronological age. Homogeneity according to age could not be accomplished within a first grade class as children who had just turned six attend the same class as 7-and-a-half-year-olds or even 8-year-olds. The psychic and somatic developmental level of these children varies to a great extent; this is a difficult problem to solve for teachers who work with first grade pupils. Until the use of this set of tests becomes general practice, this problem could be solved by placing children on the same level of psychic development into one class and t he need to differentiate within this would affect fewer children.

Is it possible to delineate an optimum age-range from the viewpoint of learning abilities?

On the basis of results from all tests administered, children in the 6.5-year-old age-range and in the 7-year-old age range performed on the maximum achievement level so it can be concluded that the optimum age to start schooling is 7 years of age.

We gained useful information regarding the screening procedures, as well.

Tests chosen to be a part of the screening procedure are adequate for administering in group-situation only. This results in a lower level of performance in the case of testing same-age children in a one-to-one situation. In our view, this can be the result of social immaturity, in which case instructions given to children as a group are not as motivating as in the more personal, one-to-one situation. The lower performance level can be due to the fact that there are more distracting stimuli and disrupting moments in a group situation and concentration span is lower. In spite of this, or perhaps because of this similarity to class-teaching situations, there was a great convergence in the results of pedagogical and psychological assessments. The applied procedures proved to be reliable in the screening of children with learning disabilities.

On the basis of our findings there is no overlap between the three screening procedures, i.e. they give information regarding different areas, and therefore we feel none of them can be omitted. The tests supplement each other and they can be used for the purpose of screening a larger population.

We can recommend their unaltered use to school psychologists with the restriction that, in the case of underachievement, further and more differentiated testing is needed. The most adequate form of this is an individual, one-to-one diagnostic screening with more precise data concerning early development and family life, which makes the assessment of developmental differences possible (P. Balogh, 1990).

The Characteristics of the Kindergarten Educational Program

In establishing the concept of the educational program, the following theoretical and empirical findings were considered:

1. Current views in developmental psychology, and empirical data on the formation and ontogeny of cognitive structure.
2. The characteristics of the phases of the development of the perceptual and perceptuo-motor functions.
3. The age specific features of the cognitive development of 3 to 6-year-old children.
4. Piaget's psychology of operations; Bruner's views on the development of the levels of representation; Flavell's theory on the heterogeneous development of cognitive structure; and the developmental research pointing out the existence of sensitive periods and dominant ability structures.

The enrichment and development of a given scheme-system at an iconic representational level can be achieved most efficiently if the training tasks allow the simultaneous emergence and application of the enactive and symbolic (linguistic) levels of representation. While the enactive level guarantees the content validity of the schemes, the accompanying verbalization brings them closer to the level of symbolic representation.

The training program for the development of perceptual and perceptual-motor functions has been worked out by taking the above relationships into account; while at the same time guaranteeing the simultaneous promotion of movement, body scheme and verbal skills, as well.

The Complex Educational Programme for Learning Disabilities Prevention was worked out in the 90's considering findings in developmental psychology and P. Balogh's previous research data.

Areas of development targeted for assessment are (by P. Balogh):

- Motor (gross, fine) skills
- Body scheme
- Spatial orientation
- Cognitive skills
- Eye-hand coordination
- Language, speech/articulation
- Social skills

Motor development

Kindergarten: Name: Date of birth:	Entering	Little-group	Middle-group	Big-group
"Pumping"				
"Stretching fingers in a fan"				
Stringing beads				
Hopping (on two and one leg)				
Catching (a ball)				
Balancing on one foot (15 min)				
Touching each finger to the thumb				
Sensing fingers with eyes closed				
Forming a fist by curling fingers				
Right or left handed				

Body scheme development

Kindergarten: Name: Date of birth:	Entering	Little-group	Middle-group	Big-group
Head, body (trunk), back, tummy				
Eye, eyelid				
Nose, nose's wing				
Mouth, tongue				
Ear, neck, back of the earlobe				
Hand, back of the hand, palm				
Fingers, finger tips,				

knuckle
Leg
Brest, chest
Face
Arm
Thigh
Knee, knee-joint
Forehead, eyebrow
Chin
Elbow
Joint
Ankle
Foot, sole
Toe, heel
Shoulder
Waist
Hip

Spatial orientation development

Kindergarten: Name: Date of birth:	Entering	Little-group	Middle-group	Big-group
Up				
Down				
Below				
Above				
Over				
Right, left				
Ahead				
Back				
Beside				
Between				
Under				
Can change direction				
Behind				
Before				
On the right side				
On the left side				
Beyond				
Among				

Cognitive development

Kindergarten: Name: Date of birth:		Entering	Little-group	Middle-group	Big-group
Classifying objects according to	colour shape size similarities-differences				
Recognizing events related to time	iconic symbolic causality				
Features of attention span	can concentrate pay attention for a short period pay attention only during playing easily distracted scattered, inattentive others				
Performing motor tasks verbally	perfect, exact essential elements unable to talk				

Fine motor (eye-hand coordination) development

↓

on the basis of Goodenough's "draw-a-man" test

Language development

Kindergarten: Name: Date of birth:		Entering	Little-group	Middle-group	Big-group
Vocabulary	rich average poor				
Occurrence of abstract expressions	often sometimes never				

	speech defects
	(what kind?)
	fluent
Speech rhythm	halting
	quick
	slow
	in sequence
Description of a picture	identifies a
	simple action
	realises
	relations
	correct
	salient
Text reproduction	features
	incomplete
	unable to
	reproduce

Social development

Kindergarten: Name: Date of birth:		Entering	Little-group	Middle-group	Big-group
Contact with adults (rapport)	initiate				
	accept				
	withdraw				
	refuse				
Contact peers	initiate				
	accept				
	withdraw				
	refuse				
Acting	looking around				
	acting alone				
	streaming				
	getting connected				
	with the others				
	complying				
	cooperating				
	initiating				
	leading				
Perceiving the task	reacting				
	accepting				
	performing				
	can’t make sense				
	perceives but does				

	not perform
	perceives in parts
	perceives under directions
	perceives alone
	absorbed and persistent
	confused
	even-tempered (balanced)
Emotional aspects	nervous
	aggressive
	moody
	withdrawn (uncommunicative)

Subject matter readiness

Kindergarten: Name: Date of birth:		Entering	Little-group	Middle-group	Big-group
Independence	performs without help				
	sometimes with help				
	only with help				
Coping with a task	well motivated				
	unmotivated				
	absorbed				
	doesn't absorb				
	persistent				
	non-persistent				
Speed of working	fast, dynamic				
	average				
	dawdling, hesitant				
	shifting attention easily				
	shifting attention not easily				

When frustrated	tolerant gives up hot-tempered aggressive regressive

From Katalin P. Balogh et al. (1997, 2004): Komplex prevenciós óvodai program. Kudarc nélkül az iskolában. Trefort Kiadó, Budapest.

For ***school-based observation*** Katalin P. Balogh provides observational questions/criteria for the teacher to follow:

I. Typical behaviour

1. Moves consistently (fidgets).
2. Touches something consistently.
3. Cannot hear when called (or pretends).
4. Startles when called.
5. Moody with outbursts.
6. Changes (or discontinues) activity with difficulty.
7. Moves very slowly and/or hesitantly.
8. Very shy, fractious.
9. Others:

II. Behaviour during school-activity

1. Does not pay attention, as if he is not being there.
2. Easily distracted.
3. Does not follow teacher's instructions.
4. Does not begin to work, it seems as if he is not understanding the task.
5. Remains silent (as if confused) when being asked.
6. Does not work neatly but provides convulsive writing and drawing when presented with pictures and written text; crumples the paper.
7. Is not able to wait or is delayed.

*The **main points of the educational programme*** are as follows:

To ensure complex manifold effect the emphases are put on:

- the development of the motor skills (gross, fine),
- the development of the various perceptual (visual, auditive, tactile and kinaesthetic) channels,

- body scheme, development of the perception of three-dimensional space by developing laterality,
- verbal development.

Indirect approach, the use of playful methods – in accordance with the children's development stage.

Main areas of the educational programme

Development of motor skills:

- gross motor (e.g. walking, running, jumping, sliding, crawling, climbing in different kinds of rhythm)
- balancing (e.g. standing on toes, heel, one foot; walking, crawling on a narrow surfaces; body roll; rollers; bicycle, skates)
- eye-hand coordination (e.g. throwing a bean-bag at a different size of cycle from different range; throwing a hoop in different directions; bowling; ball-games)
- eye-foot coordination (e.g. skipping-rope; hopscotch; drawing with foot different kind of shapes on the floor, sand, etc.)
- fine motor (e.g. forming play-dough; building blocks; folding paper, puzzles; cutting; paper-and-pencil exercises: drawing, painting, colouring)

Development of body-scheme:

- recognizing the parts of the body (e.g. exercises with mirror – recognizing external features; touching and identifying the parts of the body with eyes opened and closed; focusing attention on definite parts of the body in different postures)
- laterality (e.g. motor exercises with left and right hand, foot; recognizing front and back parts of the body; teaching vertical zone of the body; exercises with compared postures: stand/climb/sit/kneel/lie in front of, behind, beside, between or under something.)
- concept of the body (knowledge of the function of the body and its parts) (e.g. motor exercises with parts of the body: head, trunk, arms, fingers, feet, toes; identifying the parts of the body and their functions; recognizing the parts of the body according to their function; recognizing the parts of the body on a picture)

Development of perception:

- visual (e.g. controlling of the eye-movement; visual fixation; visual gestalt – parts and whole: what's absent, finding the hidden figure; recognizing chronological order according to pictures; continuation of visual rhythm; recognizing visual position; development of visual memory)
- gestalt and shape constancy (e.g. forming different shape, size with movement; recognizing different objects, shapes, sizes in the environment; organizing visual patterns in relation to shapes, sizes, colours; setting different shapes in order)
- tactile (e.g. rounding, rolling, flatting play-dough, clay; forming different shapes, sizes; changing different forms, sizes; recognising small objects by touching)
- kinaesthetic (e.g. moving certain movement with hand, foot – with eyes opened and closed; drawing a shape on one's back – recognizing and removing it)
- space perception (e.g. recognizing the basic directions with parts of the body, with objects; teaching the expressions of relative position)
- auditive (e.g. listening to different sounds of the human, nature; clapping, tapping rhythm; collecting words with certain vowel)
- intermodal channels: visual – tactile (e.g. where are the recognized by touching objects in the visual field); visual – auditive (e.g. show the object, animal you have heard in the picture); visual – kinaesthetic (e.g. recognizing movements in the visual field); auditive – tactile (e.g. describing objects by touching)

Development of verbal skills: naming objects in the house, kindergarten, close environment:

- clothes
- parts of the body
- actions
- relative positions: directions, locations, space of time
- classification: basic shapes, basic colours, sizes, similarities – dissimilarities, opposites.

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MAGDOLNA ESTEFÁN VARGA–MÁRTA HÍDVÉGI–
KRISZTINA SZŐKE

METHODS FOR DIFFERENTIATING LEARNING DIFFICULTIES AND LEARNING DISABILITIES: DIFFERENTIAL-DIAGNOSTIC ASPECTS

In special pedagogical complex diagnostics, clarification of basic concepts is very important.

In Hungary, the process has already started, but further clarification of matters is deemed necessary. Experts in the pedagogical professions and closely related sciences (medicine, sociology, law) use different terms and categories. We aim to dissolve this anomaly.

In educational law, the category of children with special educational needs is defined in respect of special provisions and benefits.

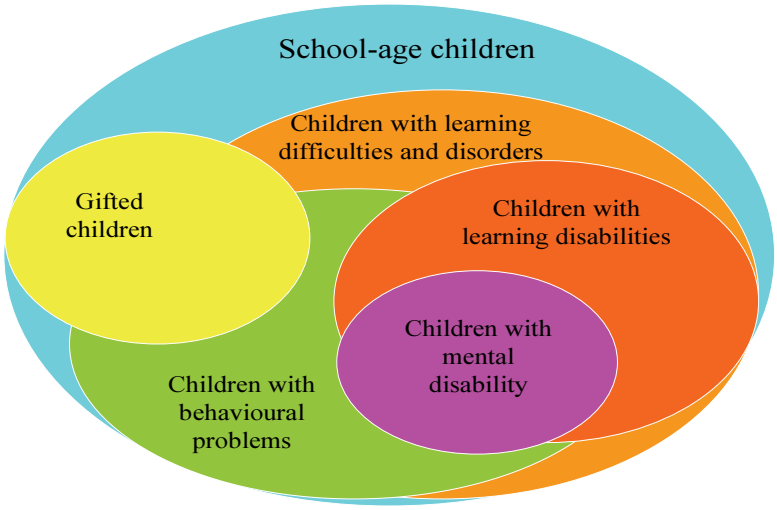
"Child or student with special needs: the child or student, who – according to the expert opinion of the expert and rehabilitation committee –

a) has a physical, sensory, mental, speech handicap, is autistic, in case of occurrence of more types of handicaps is cumulatively handicapped,

b) is permanently and seriously impeded in the teaching-learning process due to disturbances of psychic development (e.g. children with dyslexia, dysgraphia, dyscalculia, mutism, hyperkinetic syndrome or activity disorder)."

Currently, in Hungary, in a statistical and provision sense, all children with classical types of handicaps and all students in the category of disturbed psychic development are labelled handicapped. Therefore, handicapped children show a high percentage of school age children in Hungarian educational statistics.

Children with special educational needs in school-age population



Children with special educational needs (Némethné 2000.)

More and more schools start the education of children with special educational needs inclusively, without any previous experience.

In the school year of 1998/99 there were 789 segregated classes with 8299 mentally handicapped children in 392 primary schools, and 848 integrated pupils in 159 schools (Némethné 1999). The number of integrated students doubled in two years. According to the survey in 1999/2000, 1999 mentally handicapped children were integrated in 267 primary schools (Némethné 2001). Two new expressions appeared in the special education literature– *integrative pedagogy* and *inclusive pedagogy*.

In integrative pedagogy, special needs and help based on learning disabilities are emphasized. In inclusive pedagogy, the approach is based on integration problems into the school of the majority, and in this aspect organizational and methodological elements are more emphasized.

"We speak about learning disorders – when we find lower achievement than expected according to the IQ, it can be explained often by neurological deficit or function disorder with special cognitive symptoms. These disorders make the reading and writing process or learning mathematics difficult. Failure in learning can produce subsidiary neurotisation. Learning disorders appear in a very young age, and its symptoms can be realized also

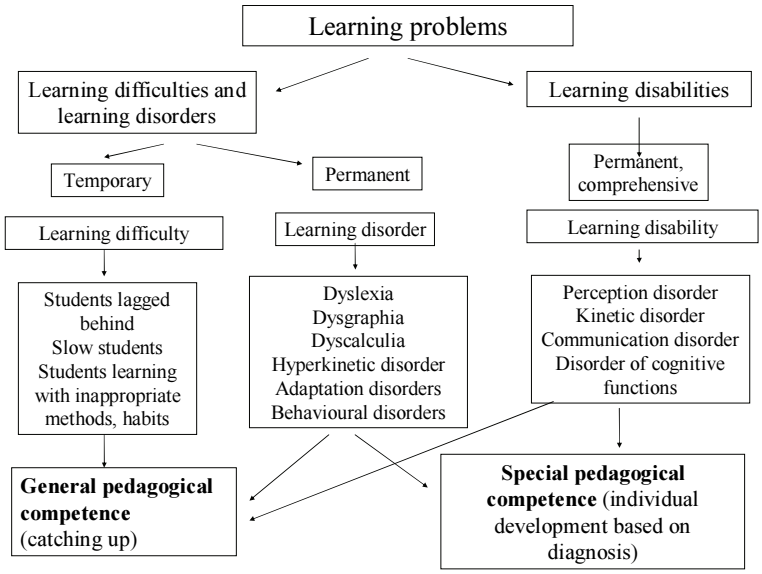
in adult age. Cognitive and learning therapy can be effective in this case. It can appear as a co-symptom of different mental disabilities." (Zsoldos-Sarkadi 1991)

Pupils with learning disabilities according to the classification of traditional special education literature have disorders or injuries on a typical organic background. That can be unambiguously diagnosed as hearing handicap, visual handicap, severe or profound mental retardation, and cumulative handicap.

The function disorders of children with learning disorders have long-lasting and wide-ranging effects on the development of the personality, despite possible changes, because the causes can be not only the pupils' biological / psychological capacities. Very often, they appear with the negative effects of the family, school, social and cultural background. 15% of school-children belong to a group of children with learning problems, and a quarter of them are children with learning disorders (Mesterházi 1995).

Current terminology often prefers to use the expression "handicapped" to express the idea that the person is not responsible for his/her situation. In the case of children with learning disorders, problems in the development of learning skills cause difficulties in their independent life.

Types of learning problems



Némethné Tóth Ágnes (2004.)

We speak about adaptation and behavioural disorders if the child cannot adopt, or only with difficulties, to group norms and values.

According to Ranschburg (1998), negative influences in the womb, or from the environment and education may account for these phenomena. Adaptation and behavioural disorders in children with function disorders (learning disorders) appear as learning problems.

The most frequently diagnosed adaptation and behavioural disorder is hyperactivity. Hyperactive children very often have average or even higher than average IQs, nevertheless, they have plenty of negative school experience, because they often have attention problems.

The place for diagnosis of special educational needs is the special educational expert committee. Its accurate name is: Expert and rehabilitation committee examining learning abilities. There is a committee in every county and in some towns. Examination of sensory and kinetic handicap, just as speech handicap is going on in national committees. The process of examination and diagnosis is controlled by strict legal regulations.

High professional standard of the examinations is guaranteed by under- and postgraduate education at Eötvös Loránd University, Bárczi Gusztáv Faculty of Special Pedagogical College.

In this institution, fundamental and complementary examinations and control examinations are conducted, and parents have the right of appeal for re-examination at every stage. There are diagnostical, psychological, special educational and social examinations. Teacher for backward children, psychologist, paediatrician and/or children's neurologist, in some instances children's psychiatrist attend the child in team work. After establishing the diagnosis, they may suggest integrative or segregative development for the child. Follow-up is performed by means of control examinations.

Diagnoses of children with special educational needs in Hungary

- Place for diagnosis: special educational expert committee (according to the type of disability)
- The process of examination and diagnosis is controlled by strict legal regulations
- Types of examination: diagnostical, psychological, special educational and social examinations
- Staff conditions: Team-work (specialists; children's neurologist, in some instances children's psychiatrist, psychologist, special educator, social worker)

– Expert opinion contains: diagnosis, suggestion of integrative or segregative development for the child, time of control examinations

There are institutions with higher normative financing, which may provide extra service for children.

Segregated, as well as integrated and inclusive institutions are found in the system. The law specifies that in integration pupils should be supported by special developmental conditions. An expert committee examines the work and conditions of schools.

Extra supplies for children with special educational needs

– higher normative financing
– when organizing a group, each counts as 2 or 3 persons
– rehabilitation lessons
– development in small groups or individually, outside school lessons
– providing professionals
– assessment and qualification regarding individual development
– exemption from subjects or parts of subjects
– giving preference to oral or written recitation
– providing therapeutic treatments and locations
– they can take the final exam in another subject
– they have recourse to certain devices in the lesson and in the final examination (e.g. lap-top, calculator, etc.).

Diagnostical differentiation of learning difficulties and learning disabilities is difficult in many cases. Settling the future of a child requires comprehensive, thorough examinations and measures. There is a possibility to continuously follow the child in their own class and family for a year, in the case of some uncertainty. Experts set up observation viewpoints for the teacher, and after the one-year observation period, a team comes to a decision concerning the child's condition. Then the child is appropriately attend to according to the developmental needs of the child.

Successful integrative education requires changes in attitudes, and commitment on the part of the management and teaching staff. A key aspect is to find those people who can manage the innovation necessary for the integrative education and can establish the circumstances and requirements necessary for cooperation. Continuous support of best practices can result in motivation and improvement.

New competences of teachers

According to previous studies, we can summarize the competence of teachers (important according to the actors) successful in the learning development of pupils with special education needs.

Important tasks for teachers in integrative education:

- To have a motivational basis necessary for education and improvement (individual, community)
- To find individual methods for differentiated education and development
- To plan and manage activities with handicapped children
- To understand the pupils' diagnoses from a teacher's point of view, and find the appropriate development methods.
- To find alternative solutions to an educational problem, and manage the lessons successfully. To stay in the background and emphasize pupils' activity.
- To cooperate with parents, social partners and specialists

Kópalakiné (2003)

Future role of teachers for backward children

- Teachers for backward children in regional and local professional centres
- Shift from medical and pathological approaches to pedagogical perspectives
- Shift from assimilative integration to inclusion based on cooperation
- Switch from direction to counselling provided for parents and students
- Shift from passive students to active students – prevalence of the constructivist approach
- Shift from individual expert to counselling team

In inclusive pedagogy, the approach is based on the integration problems of the school of the majority, and in this approach organizational and methodological elements receive more emphasis.

The integration method must be learnt by special and normal educators and specialists. It is important to know the criteria of successful integration of children with learning disabilities. A child-centred approach should be dominant among the educators, this way the approach can be acquired by the society. Curriculum development of higher educational institutions can be a

good occasion to introduce subjects in teacher education related to interdisciplinary theory and practice of integration of children with learning disabilities.

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TÜNDE TASKÓ

LEARNING FACTORS OF ACADEMIC UNDERACHIEVEMENT

Summary

There is a growing body of research indicating that students who have learning problems like lack of effective learning techniques, strategies and adequate learning habits can become underachievers.

The Department of Psychology of Eszterházy Károly College took part in an international research project (Comenius 3.1) on academic underachievement. The main purpose of the project was to reveal the most important factors in the background of academic underachievement regarding teachers and students. The methods we used were questionnaires and interviews.

On the bases of the results of this research it became clear that a pregnant part of the reasons attached to learning problems were lack of effective learning techniques and methods and the problem of adequate learning habits. Based on these findings and the related literature we developed a Likert-type scale (5 point) to study academic underachievement in connection with learning of 12-13-year-old primary school students. 456 students (241 male, 212 female) filled in the scale.

On the basis of a statistical analysis of the data we managed to distinguish four factors: learning habits, metacognition, self-regulation and the fourth factor was called anxiety.

We are in the beginning of the present research. In future, we intend to complete our research with an IQ test and the EPQ questionnaire to separate students with high level school achievement from students with low level school achievement and to try to find the main differences in learning habits of the two groups.

Introduction

The causes of academic underachievement are complex, multi-faceted and difficult to identify (Tóth, 2000). Many works in connection with this problem emphasize social, emotional, motivational, familial and cultural

factors with little attention to cognitive contributors (Geffert, 1996). The relevant literature shows that underachievement should best be regarded as a symptom of more basic problems that are related to the child-family-school interaction system. The most frequently studied part of this interaction system is the student. It is not rare that the pupil himself is considered as merely responsible for her/his poor school performance. This latter way of thinking about underachieving pupils is reflected in the fact that the treatment of the problem of academic underachievement rarely involves parents and teachers (Taskó, Estefán, Varga, 2000).

To determine the definition of underachievement is a very complex issue. At the beginning of the research of underachievement almost all the researchers agreed that underachievement is due to a significant discrepancy between measures of intelligence and academic achievement (Gallagher, 1985). Thorndike criticized this definition because it neglects the regression-effect and leads to a wrong a classification of subjects. Other researchers stated that defining underachievers by means of a simple difference or even by a difference between predicted and observed scores leads to an investigation that is impractical because the group of underachieving students is too heterogeneous (Tóth, 2000).We tried to take the above mentioned research results into account in our own research. In the preliminary phase we defined underachievers by differentiating them from children with learning disabilities (usually called partial learning disabilities, where the difficulties are manifested in one or another specific area). Underachievement is content- and situation specific. It shows that finding the appropriate definition of underachievement is very difficult. The best way to define underachievement is by considering the various components.

We accepted the following definition at the initial stage of our research: underachievers are pupils whose expected and actual school-performance shows some discrepancy. The discrepancy could not be the result of a disorder in intellectual or physical conditions. This discrepancy could not be restricted to one learning subject and could not be the consequence of a conscious choice of the pupil.

The last sentence of the definition means that we do not consider pupils who make a conscious choice for poorer school performance underachievers because they want to do other important things like playing music, doing sports, etc. As an example, gifted children who do not succeed in school are often successful outside school. Even a student who does not do well in most school subjects may display talent or interest in at least one school subject.

On the other hand, we think it is necessary to make a distinction between underachievement and learning disabilities as mentioned above. In view of the fact that many specific learning difficulties are due to a lag in cognitive

development, we can add to our definition that underachievement is not a consequence of a lag in cognitive development. It is important to point to another aspect of underachievement: every underachieving child has at least average intelligence score. We are conducting our research on underachievement using this definition.

The background of our present research

Our research, which was part of an international research program (Comenius 3.1), intended to investigate and provide more insight in the reasons and factors of underachievement considering teachers and students. This Comenius 3.1 project was started in 1998 and has been conducted by the University of Cambridge, Katholieke Hogeschool Brussels and Eszterházy Károly College in Eger. We have done the research in three schools in each country. The aim of this research was to identify and describe patterns of underachievement among fourteen-year-old students. Our research team developed an in-service teacher program in connection with school underachievement to help teachers deal with underachieving pupils and to prevent this problem.

The next phase of our work was to find the right methods for getting information and describe the pattern of underachievement in each country. Based on these data we determined the similarities and differences of the problem of school underachievement in the three countries. Finally, we decided to develop a questionnaire about underachievement for teachers and another one for pupils. We wanted to know how teachers and pupils thought about underachievement in the three different countries with different social and cultural backgrounds and, quite naturally, with different school systems. It was an essential and important starting point of our research on underachievement to know and understand how and what pupils and teachers think about their roles and their schools' role related to the problem of underachievement.

Method

The teachers' questionnaires consist of two main parts: the causes of underachievement associated with pupils and the causes of underachievement associated with teachers and schools.

The pupils' questionnaires consist of the following dimensions: satisfaction with school, degree of interest, learning problems, personal problems, the image of a supportive and a less supportive teacher, attitude to learning and learning habits. We used the same questionnaires in each country. In this study we only present the Hungarian data and results.

Participants and procedure

Participating students came from primary (state) schools in Eger. Students participating in the research were 14 years old. We asked not only underachieving students to take part in the research. Fourteen-year-old students are in the puberty, which can have many consequences and influences on learning performance. A range of different factors, such as emotional problems, identity crisis, conflict with their parents, etc., may account for a student's failing school performance Another problem of this age group is that students enter a new school level (secondary school) a few months after leaving primary school. We must not forget about these circumstances, which could also stand in the background of school underachievement. In view of these facts we can state that underachievement is determined by several factors. The students' questionnaires were filled in by 233 pupils (female: 52 %. male: 48 %.) from the three schools.

The teachers' questionnaires were filled in by 103 teachers from three schools of Eger. We spoke to the teachers about the definition of underachievement before administering the questionnaires.

Results of Comenius 3.1 research

The results of the questionnaires from the three different schools were analyzed together. The evaluation is based on correlation matrix and frequency distribution.

At the beginning of the questionnaires we asked pupils to give us their school grades, which was necessary because we wanted to know how pupils judged their school performance. According to the frequency distribution more than one third of pupils thought they would be able to improve their performance at school.

We asked teachers as well what they thought about their pupils' achievements on the basis of definition. According to their answers they thought that 38 % of their pupils were underachievers.

The students' satisfaction with school

More than 50% of the pupils were highly satisfied with their school. According to the correlation matrix, school satisfaction correlates with school grades and with how sympathetic the teachers are. Pupils consider those teachers sympathetic who accept and respect them and give pupils a lot of freedom. Most of the pupils do not feel accepted by the teachers and do not think that teachers treat them with respect and give them a lot of freedom.

We consider that teachers with good social skills are able to create a good emotional atmosphere at schools where pupils feel safe, and in our opinion, this is a very important aspect of school performance. A good school atmosphere can help pupils feel satisfied with their school and concentrate on their studies. Improving social skills of teachers can be an important part of an in-service program.

Learning problems

The frequency distribution shows that most of the pupils do not ask anybody for help if they have learning problems. Pupils never ask the director and the vice director for help and they never go to ask the Educational Council Service for help, which is an independent institute and not part of the school. Pupils sometimes ask one of their teachers or their headmaster for help with their learning problems. Mostly, it is the mother and the father who help their children with their learning problems.

These results show that there are no competent persons at schools who can help pupils with learning and its reason can be that pupils have difficulties in their relationships at school.

Personal problems

In this case we came to the same conclusions as in the case of learning problems. Pupils turn to their mothers or their friends with their personal problems.

Learning attitude and learning habits

Pupils who like going to school like learning and learning is important in their opinion. They are active in the lessons and like the way they are taught, which helps them to improve their knowledge at home. The repetition of the learning material showed high correlation with the acceptance of the statement “I like learning”.

The result of the teachers’ questionnaire

Our main aim with this questionnaire was to get answers to the following questions: What do teachers consider the reasons of underachievement on behalf of pupils and teachers? What roles do they have in connection with underachievement?

We analysed the acceptance of positive statements related to under-achievement.

According to the results of the first part of the questionnaire, the most important reasons of underachievement on the side of pupils according to their teachers were as follows:

1. They do not study at home to improve their knowledge
2. Their learning methods are not sufficiently appropriate
3. They have personal problems
4. They have disadvantageous family background
5. They cannot follow the lessons
6. They have difficulties understanding the subject matter
7. The pupils are not sufficiently motivated
8. They have no self-confidence

This order shows that teachers think pupils underachieve because they do not study at home. It means that teachers find studying at home at least as important as learning at school. They think the main task of teaching is giving their pupils knowledge and developing learning abilities and learning methods, although they think both are important factors of school performance.

We found it interesting that among teachers' answers, motivation and self-confidence are in the last two places, although, according to the relevant literature, these factors are very common causes of underachievement.

In the second part of the questionnaire of teachers, they were asked to choose all the positive statements as typical features of the school where they worked. We made an order based on the answers, as follows:

- The teachers are well-qualified
- The teachers are patient
- The teachers focus on developing pupils' skills
- The teachers prepare pupils for studying at home
- Education is important
- The teachers are prepared to treat pupils individually
- The way of teaching is interesting

According to this order, teachers think that an interesting way of teaching is a factor of inferior significance in affecting underachievement. It means this aspect is missing in connection with lesson plans. In our opinion, we can help teachers by giving them ideas to make their lessons more interesting.

These results can be the starting point of a more thorough and more detailed research, completed with psychological tests, interviews, etc.

Present research

The present study's final goal is to examine the differences between underachieving and well achieving students in learning habits, metacognition, self-regulation and anxiety. We are at the beginning of our research. By now, we have worked out a 5-point Likert-type scale to investigate learning, and we managed to uncover four factors by means of statistical factor analysis.

There is a growing body of research indicating that students who have learning problems like lack of effective learning techniques, strategies and adequate learning habits can become underachievers. Rimm (1984), studying the school career of underachievers, emphasizes that their learning habits are often deliberately not suitable. He also emphasizes good academic achievement at the very start of school, studying irregularly for the lessons, disregarding and disorganising tasks and thinking about school that is boring and unnecessary. In connection with the school career of students who have discrepancy between their intellectual abilities and their preceding and present academic performance, Gefferth (1989) found that one of the reasons in the background of underachievement is lack of elementary learning skills, and that unattended learning disorders can cause secondary symptoms like school failure. One of our results of Comenius 3.1 research was that the most frequent cause of academic underachievement was inappropriate learning techniques, methods and habits (Dávid, Estefán, Taskó, 2004).

Consequently, one of the most important goals of education has become to help students to improve their learning skills and to prepare them to continue their education after compulsory schooling has been completed. We think it is very important to identify the main learning characteristics of academic underachievers to help them learn to learn, to learn better and not to waste their potentials.

The aims of our research were to work out a questionnaire based on the results of Comenius 3.1 and the related literature to identify learning characteristics and factors of academic underachievement. We know there could be many causes in the background of this problem as it is very complex and multi-causal. In our research we focused on the cognitive aspects of school functioning.

Participants

Participants included 456 primary (state) school students (241 males and 215 females), from the age of 12 to 13. 226 students came from villages and 230 students were from towns. Students took part in this study voluntarily.

Method

We worked out a 5-point Liker type scale to examine learning characteristics like learning habits, learning techniques, strategies, knowledge about their own learning and control of learning, etc. The experience and results of Comenius 3.1 research and the literature of academic underachievement helped us to work out and develop the scale. The scale consists of 60 items in connection with learning. During developing the scale, we focused on academic underachievement. Students had to decide to what extent they agreed with the statements in a 5-point scale.

We used factor analysis to identify the main factors of the scale.

The results

Four factors were uncovered by factor analysis. The table below shows the factors and a few items of each factor:

Factors	Items
Metacognition	I could achieve a better scholastic record. I would be able to achieve better. According to my teachers I could do better. I dabble at preparing for the lessons. My school achievement is uncertain. My learning methods are poor.
Learning habits	I lay out my learning in advance. I put off learning. I correct the completed tasks. My attention strays during learning. I attend the lessons without preparing for them.
Self-regulation	I interrupt learning. I study quickly and don't think about it. During learning time I can't finish my homework. In my opinion homework is unnecessary. I begin to learn because my parents push me to.
Anxiety	I am afraid of verbal tests. I am afraid of written tests. I am very nervous when we are writing test papers. I get nervous by repetition.

We gave the following names to them: metacognition factor, learning habits factor, self-regulation factor and anxiety factor. We examined the inner coherence of these factors: metacognition (Cronbach-alpha: 0.779), learning habits (Cronbach-alpha: 0.495), self-regulation (Cronbach-alpha:

0.843) and anxiety (Cronbach-alpha: 0.588). These results show that we need to revise the learning habits factor, because of its low Cronbach-value. We think these factors could be very importantly related to academic underachievement. Our hypothesis for further research is that there are differences between academic underachievers and well achievers in the four factors.

The concept of life-long learning has recently become a hot issue in education. Acquiring and applying the growing body of information requires continuing self-directed learning and more knowledge about our learning across the lifespan (Nota, Soresi, Zimmerman, 2004). To find which learning factors need to be improved to achieve better is very important. Metacognition and self-regulation is essential to improve learning techniques and strategies.

Cognitive and learning aspects of academic underachievement are less examined, therefore we need to give more attention to this problem.

Further steps of the research

These findings of this phase of the research suggest that we need to revise our factors of our questionnaire, especially the learning habits factor, and we need further statistical analysis as well. Furthermore, we need to choose the appropriate test battery to separate the experimental group (underachievers) and the control group (not underachievers). It is necessary to complete our investigation with an IQ test, and EPQ test as well. We suppose we will manage to find and identify the differences between underachievers (experimental group) and not underachievers (control group) in the four factors, with the help of our scale completed with IQ test and EPQ.

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MÁRIA DÁVID–KATALIN HÉJJA-NAGY–
MARK KINNEY

DEVELOPMENT OF LEARNING EFFECTIVENESS AND THE ROLE OF GROUP COUNSELLING IN THE PREVENTION OF SCHOOL SETBACKS

The need for creating effective learning methods in the schools has long been underlined. The realized need is however followed with delay in practice. Our national educational policy considers the preparation of students for independent learning an important task to be developed in future. Ildikó Mihály (2002) summarizes the tasks set by the ministers of education of countries wishing to join the EU at conferences between 1998 and 2002. These tasks concerned the necessity of improving the quality of education. She quotes that at the conference held in Uppsala the skills of students necessary for society were classified into two dimensions by the ministers. The personal dimension included the basic skills (reading and counting), the basic knowledge in mathematical and technical subjects, entrepreneurial ability, the knowledge and use of informatics and communicative skills. The cultural dimension included skills relating to methods of effective learning, social skills, knowledge of foreign languages and general cultural elements. The national educational policy relying on the results of the PISA investigations formulates the following main tasks: the children are to get usable knowledge while undertaking less burden. At the same time, the conditions for equal opportunities should be improved.

At Eszterházy Károly College, comprehensive research has been carried out since 1999 into the possibilities of development of learning effectiveness. In the framework of this research we collected the related professional works and worked out a training program to develop learning effectiveness, and at the same time we tested the efficiency of this training with college students. On the basis of these results we started to develop a computer programme with the aim of improving learning effectiveness. In the present study we summarize the results of that research project and provide information about the computer programme.

Theoretical background – How to develop effective and independent individual learning?

From a cognitive perspective, the key of learning lies in the capacity of the individual for mental representations of the world and carry out mental operations on these representations and not in reality (Atkinson, 1994). Psychologists usually use the word *knowledge* only if information is mentally represented in a specific form and it is organized in some kind of a structure (Eysenck-Keane, 1997). This complex organized knowledge (cognitive scheme) gives a frame for the acquisition of new information; the new information is adopted to the scheme or it may even modify the scheme (see Piaget, 1997). Whenever we acquire new information, it is always adjusted to the frame of our former system of knowledge, which enables us to reorganize our knowledge.

Constructivists, contrary to the traditional theory of cognition, think that the whole knowledge, or in other words, the complete cognitive system, is a complex system in every moment, which is not enriched with new elements by its relations with the outside world and inner elaboration, but its own structure will be reorganized (Nahalka, 2002, p. 41). According to this constructivist viewpoint, new knowledge does not mean cumulative development as added to the pervious knowledge, but it is a restructuring of the whole knowledge.

According to cognitive psychology, it is not the quantity but the quality of knowledge that is determinative in mental achievement, and important factors of the quality of knowledge are availability and usability. Therefore, it is important in what form the knowledge is represented, what kind of connection exists between its elements and to what extent it is meaningful (Csapó, 1998). Characteristics of effective knowledge are availability and usability in many situations. Erikson and Smith (1991, cited in Csapó, 1998) use the expression *competence* to indicate usable and intelligent knowledge. The development of cognitive competence has become essential in pedagogical investigations (Csapó, 2001) and was the topic of the latest school surveys based on comprehensive competence measurements (Schütter–Vári, 2004).

If we want to help pupils to acquire intelligent, meaningful and usable knowledge, we have to take their previous experience into consideration, and we have to strive to provide intelligent knowledge, and the new knowledge should be acquired in many different situations (Csapó 1998).

Special attention should be paid to meta-cognitive knowledge, which aims at the effectiveness of learning that is characterized as a person's knowledge about his own mental activity and his ability to direct it (Kalmár

1997). Lappints (2000, p. 53) describes self-reflection and consciousness as the two most important characteristic features in meta-cognition. He emphasises that "due to self-reflection related to learning the individual recognises his own possibilities, inclinations and gifts. He can compare his own learning experiences with the demands of the environment and according to this he may modify his learning methods, habits and learning style. This is already a higher level of self-development…"

According to Fischer (2000, p. 53) "proper thinking and learning methods are characterized by meta-cognitive direction." He speaks about "meta-cognitive" pupils who are well aware of their mental processes and know themselves and their tasks very well, and who are capable of directing their thinking processes, their independent learning, and to direct their learning towards new areas if needed. He emphasises three meta-cognitive elements of meta-cognitive knowledge: planning of learning, monitoring the process and evaluation of the process.

He explicitly speaks about meta-cognitive or in other words intrapersonal intelligence, which, according to him, is the most important factor of human intelligence.

"This is the way to get to our thoughts and feelings in order to understand what we feel and think and to know the reasons of our actions" (Fisher, 2000, p. 22).

Components of individual independent learning

The figure below shows components of the individual independent learning process (Panchara, 2000).

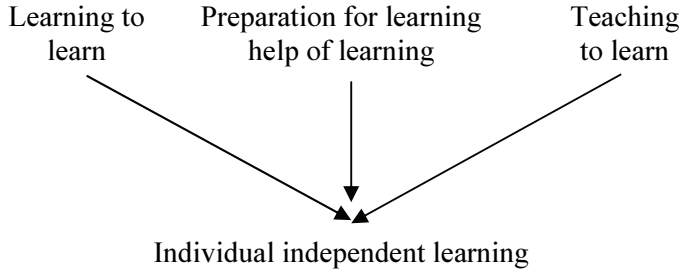

Figure1: Model of individual independent learning

This model shows how we categorize the related works, and the Learning Improvement Computer Programme is also based on this model.

The meaning of the factors of the model:

- Learning to learn means the student's activity. While the students learn the curricula, they learn to learn, too.
- Preparation for learning, help of learning mean the activity of parents and teachers, to create a suitable environment for children to learn, to develop their learning abilities.
- Teaching to learn means to use direct methods to develop students' learning skills.

Based on this model, we distinguish four methods for improvement of individual independent learning. These are as follows:

- **Methods applied in schools based on children's activity** (these include for example cooperative techniques and differentiated development)
- **Indirect development of learning methods** (creation of a suitable learning environment at home and at school, development of basic skills for learning)
- **Direct development of learning methods** (development of effective learning skills, teaching to structure the learning time and material, practicing learning techniques and strategies)
- **Learning counselling** (personal solutions of learning problems, development of meta-cognitive functions related to learning, development of direct learning methods for the learning problems)

Main tasks of direct development of learning techniques

As the teaching of learning can be realized primarily by means of direct development, in the following, we will detail the main tasks of direct development of learning techniques. We distinguish the following areas of direct development:

a) Development of effective learning habits

Habits are defined in the psychological literature as automated acts due to numerous repetitions. The individual runs habitual acts quickly and appropriately, without any particular psychic effort and control. This way habits can relieve conscious control and free a huge amount of energy. That is why it is important to build a system of habits in learning as well, so that the planning of learning should not require much energy from the student, because he will know exactly when, where, what and how to learn. In order

to develop habitual learning, regular practice is needed: in the beginning with the help of an adult, then it will be individualized.

We find the development of effective learning habits important in three fields:

- Creation of a suitable learning environment (tidy learning environment, proper light, proper use of learning equipment).
- Scheduling (daily and weekly schedule of learning time, planning of time required by different subjects)
- Development of learning habits (order of subjects in learning, optimization of time and frequency of repetitions).

b) Formation of learning attitude, development of learning motivation

This field of development focuses mainly on motivation for learning, which is an essential factor of effective learning. Its attributes:

- Optimization of learning atmosphere: The principles of Rogers should be considered when forming a learning atmosphere, where the students can speak, tell about their opinions, ask questions. Loving acceptance, trust, empathy and congruency characterize this atmosphere, providing optimal conditions for learning.
- Optimization of the teaching material according to the development of the child: A common problem in today's education is that because teachers must keep up with the curriculum, some students drop behind and lose interest in learning. The material should be optimized to the developmental level of the child. A task is optimal when it requires some effort, but, as being appropriate to the developmental level, is not impossible to solve. These tasks can provide success, this way increasing demand-level and the feeling of competence.
- Creating motivation, using methods supporting learning competency: If the student is an active participant in his teaching-learning process, if his natural curiosity is taken into consideration, if the material is based on real experiences and is practiced in many real situations, then learning will be more effective, and the desire for learning (or in other words, his motivation) may be developed.

c) Practice of effective learning methods and strategies

The main task of the school is to teach pupils to write and to read, which are basic code systems for individual learning. We think that other learning

techniques should be taught in the lessons in primary school according to the age specific characteristics of learning. This way, students would be prepared for individual learning at the same time as they are provided with the educational material. Unfortunately, this is rarely the case; students rather need to learn how to learn from books or on special trainings or developmental programs.

We categorize the tasks of development of learning techniques and strategies as follows:

- **Basic learning techniques** (loud or silent reading, recitation of the material, repetition, pre- or post checking of the material, paraphrasing, making questions, finding key words, etc.)
- **Complex learning techniques**: combination and joint using of basic methods (making notes, summaries, tables, drafts, mind maps)
- **Subject specific learning techniques** (e.g.: different methods for learning foreign words)
- **Learning strategies**: planning of learning tasks, structuring of learning techniques (e.g.: PQRST – method)
- **Development of meta-cognitive functions for learning**: as mentioned above, the knowledge about one's own mental functions and the ability to direct mental activities are important elements of effective learning.

Main tasks of learning improvement in different age groups:

For the planning of learning improvement we have to consider the age-specific characteristics of students, as in different age-groups we have to focus on different factors. In what follows, we will describe these age-specific factors.

a) Main tasks of learning improvement in primary school period

In school-age, learning becomes the main activity of children, and the emphasis is shifted from spontaneous learning to purposive learning. School-age children tend to mug the material if they are not taught about other techniques. They cannot analyze the material individually, they need to be taught to do so. At the age of 7-8, conscious memory strategies turn up, such as repeating and mental organizing.

Main tasks of the teacher in this period:

- Preparing pupils' skills for the basic learning techniques (reading, writing, repetition, preview, discussion with others about the learnt material)
- Preparing efficient learning habits at home and at school (organization of the place and time for learning, development of habits of the learning process e.g. order of subjects)
- Preparing pupils for individual work – using methods based on their activity
- Developing basic skills for learning, filling the gaps
- Giving advice to parents to support their children's individual learning at home

b./ Main tasks of learning improvement in adolescent age

This period has overall importance in the development of learning, which is mainly in connection with cognitive development. At the age of 9-10, the capacity of memory increases, verbal abstract memory has an important role, and all forms of memory become more effective, more intelligent and comprehensive. It is a high level of meaningful learning, though, at the same time, adolescents tend to learn only materials that interest them.

Main tasks of the teacher in this period:

- Emphasis on development of intelligent learning. Importance of highlighting the main topics, development of recognition of the context.
- Teaching complex learning methods (making notes, drafts and figures).
- Practice of subject-based learning techniques.
- Development of effective learning strategies by the end of secondary school (e.g. PQRST- method)
- Using individual or group counselling since the end of lower secondary school in learning problems.

c) Main tasks of youth's learning improvement

Main tasks in this period:

- In this life period, development of learning methodology is necessary for those who could not develop effective learning habits, techniques or strategies. It may cause difficulties in learning, they cannot adopt to changing learning situations (e.g. transformation from the secondary school system to higher education).

– The most effective learning improvement method is individual or group counselling.

Research background

The present research is based on the results of longitudinal empirical research conducted at Eszteházy Károly College between 1999 and 2002. Under natural conditions we developed and carried out a training programme aimed at the development of learning-efficiency with the participation of college students. Participation was voluntary to make the sample natural. We divided participants into an experimental and a control group. Those in the experimental group took part in a learning efficiency developing training of 30 hours in a semester. Members of the control group took part in the usual college education in the same way as those in the experimental group, without taking part in the training. Our paper presents the efficiency test of the efficiency-development training. The novelty of the research derives from its method: we used group counselling with the participation of college students for the development of learning skills. In the research the characteristics of learning counselling became even clearer.

In the learning-efficiency training we directed our students to develop their meta-cognitive direction of learning. The essence of learning counselling is that we try to find solutions for individual problems in group situations, where the group provides possibility for the individual to try to find different ways to solve his own problem and to find out and plan his own learning methods and changes if needed. The group situation makes it possible to share experiences, to make relationships, and the individual can test the new behavioural models without any risk in the protective atmosphere of the group. The advantage of all group methods is that the individual gets experiences and opinions about himself, and gets feedback about his relationships and behaviour. He acquires new knowledge that is based on experiences with special significance. This is the most important element of the change. We regard the counselling group as a social environment that provides appropriate conditions for development and change, where learning is influenced by the aim the group wants to achieve, and the changes needed are accomplished with the help of the special group-effects.

A counselling group is considerably different from other types of groups in its special aims. In group counselling, like in all types of counselling, the members of the group have some kind of problem and they hope that their participation in group work will help to solve their own problem.

In our learning efficiency developing training we tried to exploit the advantages of group counselling and group-work to achieve our aims and to solve the learning problems of students.

The aims of our research

Our aim was to reveal possible causes of learning problems in college education. We developed, tested and proved the efficiency of a new method for developing learning efficiency of young and adult students. Our further aim with the research was to work out a counselling method in order to reduce the un-success in higher education, which can significantly contribute to today's psychological practice.

Hypotheses

- We assumed that learning difficulties occurring in higher education are not primarily originated in intellectual deficits, rather in deficits of learning skills or the students` personality problems.
- We assumed that group counselling is an efficient assessment for making higher education learning more efficient and for the treatment of personality problems and deficits of learning skills.
- We assumed that members of the group attending learning skills improvement training will perform better in their higher education studies than do members of the control group.

Experimental settings

Pre-test: Members of both the experimental and the control group were tested by means of ability and personality tests (see below) before beginning the training to measure starting characteristics.

Learning efficiency training: Those in the research group took part in a 30 hour learning efficiency improvement training.

Efficiency test: We repeated the tests of the pre-test to measure the effects of the training, and followed the students' grades between 1999 and 2004 (henceforth referred to as GPA – grade point average).

Statistical analysis: Research results were nalyzed with statistical tests mentioned below.

Research sample

Experimental group: N=138

Sex: 77.8% female, 22.2% male
Age: 19-23 years
Year: first year: 70%, second year: 30%
Studies: 2 majors: 63%, 1 major: 37%
Learning problems indicated: at secondary school: 30%, at the college: 51.85%

Control group: N=114

Sex: 83.3% female, 16.7% male
Age: 19-23 years
Year: first year: 70.2%, second year 27.2% third year: 2.6%
Studies: 2 majors: 72.8%, 1 major: 27.2%
Learning problems indicated: at secondary school: 23.7%, at the college: 35.09%

Methods:

We used three measurement methods in the research:

Questionnaire about higher education learning: For the analysis of learning habits we used a questionnaire of the following fields: causes of learning problems, attendance at lectures, learning habits when studying for an exam, feelings in exam situation and feelings at the college.

Intelligence–test: For the analysis of cognitive abilities we used Amthauer's Intelligence Structure Test (IST) version "A", which measures verbal abilities, mathematical thinking, spatial orientation and memory.

Personality test: we used the Californian Personality Inventory (CPI), which measures emotional stability – emotionality, interpersonal adequacy, efficiency, conventionality and autonomy – originality.

Statistical analysis: Results were analysed by means of statistical analyses (paired and independent sample t-tests, intercorrelation coefficients, factor-analysis). We compared the results of those taking part in the experimental group and members of the control group before the training and 6 months after the training.

Research Results

The statistical analysis of the results of the pre-test before and the efficiency test after the learning skills improvement training proved our hypotheses.

The results of the pre-test

According to the results of our study, we can conclude that scholastic records in higher education are determined primarily by the personality of students.

Correlation calculations of GPA and IST scores do not show interactions between intellectual abilities and scholastic records. Correlation coefficients show total independence considering both experimental and control groups. Results of factor analysis, too, show that intelligence alone does not go hand in hand with learning efficiency and cannot allow of increasing learning achievement.

Analysis of inter-correlation relations of variables points to the fact that in higher education grade point average is primarily in connection with autonomous, independent personality, use of effective learning techniques and the ability to make social contacts. Autonomy of personality shows strong significant correlation with emotional stability and level of interpersonal adequacy. Thus, in order to have a good achievement in higher education, emotional evenness and social conformity are fundamental. Results coincide with data of Bagdy et al., who, based on an analysis of relationship between MMPI and GPA, quoted that “duds are less sociable, impulsive and anxious”.

According to our results social presence of students with learning difficulties is less determined. They are less self-confident, emotionally more unstable, uneven, and tend to be more anxious than their fellows without learning difficulties. Their intellectual efficiency is weaker, their psychological sense is less mature, and thus they can hardly harmonize with the emotional state of their interaction partners, and are less empathic. Their level of responsibility-taking and reliability is lower, which inhibits their learning in the process of preparing and planning.

Students with learning difficulties did not develop appropriate learning skills that make self-sufficient learning possible, they are worse in setting out relevant matters, they are less likely to make summaries or drafts, to test their knowledge before exams, they are more anxious when taking exams and this anxiety works for inhibiting performance. They do not show worse

results in intellectual achievement than do students without learning difficulties.

According to our goals, we worked out and tried out a learning skills improvement training conducted with the method of group counselling.

Results off the efficiency test:

Efficiency tests prove the effectiveness of our training.

In the efficiency test significant changes of CPI scales indicate improvement of emotional stability and interpersonal effectiveness. As to learning skills, setting out relevant matters improved significantly, and additionally students' exam-anxiety decreased, too. The efficiency test showed a significant change only in the experimental group, not with the control group. Except for the intelligence-test, where – especially in verbal tasks – members of the control group showed significant improvement, too. Therefore, education itself has a positive influence on verbal intelligence, but does not assist either spontaneous personality development of students, or practical problem-solving skills improvement, or development of effective learning habits and techniques. The rate of students having a GPA improvement of 0.4 or higher is more than 10% larger among students in the experimental group. According to these results, we find the efficiency of our training to be proved.

We reached our research goals, our hypotheses have been proved. Learning counselling meets an aim in today's psychological practice, and according to our results it is an effective form of training in higher education. We find it necessary that learning effectiveness training with the method of group counselling should be an elective subject in higher education.

Characteristics of the Learning Improvement Computer Programme

Relying on related theoretical work and the above mentioned research results we started to develop a Learning Improvement Computer Programme, which is not yet complete. The programme exists in two languages, in Hungarian and in English. The latest version can be seen and used on the following website: www.ektf.hu/tanulasfejlesztes.

The programme is planned for adolescents and adult people to help them to solve their learning problems caused by inappropriate learning methods. The essence of the computer programme is to develop students' ability to recognize their learning problems. The programme will also provide the user

with efficient learning methods and personal strategies, and help them to acquire and practice all these methods. Therefore, the programme consists of two parts:

The first part contains a self-report questionnaire about the student's learning. The questionnaire is a Likert-type scale, and consists of items about learning habits and psychological factors related to learning. Respondents have to decide how appropriate they find the sentences to themselves. With the help of the questionnaire the students will be able to recognize their own deficiencies in learning. The results of the questionnaire will provide the basis for the individual development of learning-efficiency.

The second part contains a learning effectiveness development programme. After filling in the questionnaire, the computer makes a learning profile and on the basis of this, students can choose from the improvement programmes offered, which teach them efficient learning techniques and contain exercises to practice them.

Figure 2 shows the starting site.

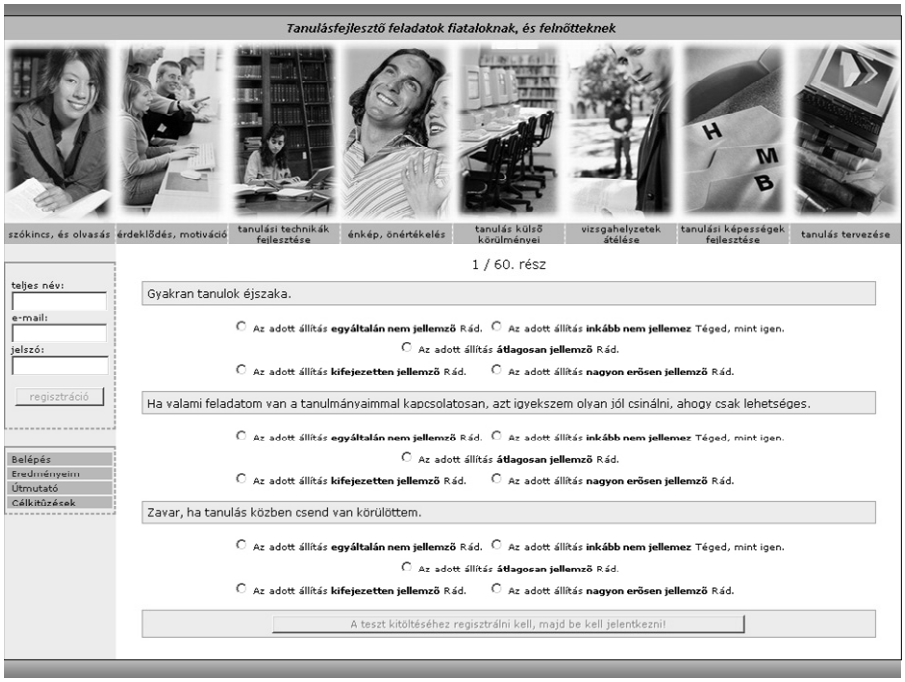

Figure 2: The starting site of the Learning Improvement Computer Programme

Now let us see how the program works. On this website students can register themselves. Then they have to fill in the questionnaire about their learning first. After filling in the questionnaire, the computer analyzes the results, and displays a rank-list of abilities for the students. From the list the users will get to know their good abilities (those listed in the beginning of the list), which they can rely on when learning, and at the same time the list will show their deficiencies (those listed at the end of the list) which need to be improved (see Figure 3.).

Figure 3: Results of the Learning Improvement Computer Programme

Accordingly, the user of the programme can click on the pictures shown in Figure 3 at the top of the page. Every picture is an icon of a developmental field, for example memory, thinking, learning environment, motivation, etc. By clicking on the pictures, the user will be guided to a set of exercises, where he/she can practice those abilities that showed a lower result. The exercises will be organized in a way that they are getting more and more difficult.

This computer programme can be used in secondary schools and higher educational institutions for improvement of individual learning, and it is also recommended for those taking part in distance learning and e-learning, as the

role of individual learning is especially important in these forms of education.

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ARTICLES FOR THE INTRODUCTION OF THE SCIENTIFIC RESEARCH ON THE DEPARTMENT OF PSYCHOLOGY AND DEPARTMENT OF SOCIAL PEDAGOGY

RESEARCHES ON PRIMARY AND SECONDARY SCHOOL CHILDREN

MAGDOLNA ESTEFAN-VARGA

LONGITUDINAL EXAMINATION OF PREMATURELY BORN CHILDREN'S MENTAL DEVELOPMENT AND ACADEMIC ACHIEVEMENT

The notion of premature infant was introduced by Ylppö, Finnish pediatrician in 1919, and it refers to infants weighing less than 2500g at birth. Ylppö's definition today needs some correction. The WHO suggests that newborns can be divided into three major groups: the groups of premature, mature and postmature infants.

A premature infant is an infant born before 37 weeks of gestation. Within the group of premature infants we can distinguish the category of immature infants, who are born before 27 weeks of gestation. Mature infants are born at 37- 41 completed weeks of gestation.

The definition of premature infants above does not correspond to the old nomenclature which defines premature infants as babies weighing less than 2500g at birth. It is better to call these babies low birth-weight infants. Though the 2500g as a weight limit is an important statistic variable (Véghelyi 1979).

Another practical reason to use the notion of low birth-weight as suggested by the WHO is that only two thirds of premature infants are real premature babies who are born before 37 gestation weeks, while one third are low birth-weight infants whose birth-weight is substantially less than expected, given the infant's gestational age. They are full-term born infants but their birth-weight is less than 2500g. They are dysmature infants who had atrophy inside the uterus. Their intrauterine developmental quotient is less than 75. Their perinatal mortality rate is much greater than the average (Csiky 1981). The WHO suggests that premature infants are infants born before 37 weeks (259 days) of gestation. Depending on the demographic factors, 6-15 percent of pregnancies which are shorter than 37 weeks end in live-birth (Wolnunth 1986). According to the above mentioned facts, birth-weight and length of pregnancy should be examined in relation to each other.

Research on the development of prematurely born children

Research results on the development of prematurely born children are not unified. Some scientists do not find essential differences in the psychic and

mental development of prematurely born children and full-term born children. Others say that being a premature infant is a kind of predisposition to get into difficulties with development and there are residual symptoms of the nervous system to a greater extent.

Boda thinks (1981) that the factors that can cause preterm labor can cause disorders in the nervous system, too, and that is why perinatal complications occur more frequently. Preterm labor without complications itself does not result in problems in the nervous system or in the lower level of intelligence. Modern therapeutic methods reduce potential disorders of the nervous system which threaten premature infants to a great extent.

Michel Pavlovkin (1979) examined the problems of maturity in premature and dysmature infants. He proved that birth-weight affected the developmental quotient (he used the Brunet-Lezine test for the examination). Infants with very low birth-weight had lower quotients. Infants weighing less than 1750g had substantially lower quotients than other infants. Pavlovkin did not find any correlation between the parents' qualification level and the children's developmental quotient. Psychomotor development of premature infants approximated the average in the 12th month.

Hegedűs–Neményi (1976) also examined the psychomotor development of prematurely born children; 8.68 percent of the examined children weighed less than 2500g at birth. Many researchers came to the conculsion that children with low birth-weight usually develop slower than children with normal birth-weight. Considering psychomotor development, scores of infants with low birth-weight followed the same normal distribution curve as that of infants with normal birth-weight. The average of 418 infants' developmental quotient was significantly lower than the national average. However, low birth-weight cannot be seen as a disadvantage from the perspective of psychic development. (They used the Functional Development Test of Popper – Szondy – Hegedűs.)

The prognosis for infants weighing less than 1800g at birth is less favourable. In the group of infants with 1901-2190g birth-weight, the average of the developmental quotient decreased in a small compass only.

According to Emmi Pikler's data (1969), prematurely born children had a delay in motor development. Infants weighing 2001-2600g at birth showed an even delay (about 4-6 weeks), except for rolling over, which appeared 3 weeks later. Infants born with less than 2000g showed a delay of several weeks, 6 weeks on average; they started to walk 17 weeks later, more than a quarter of a year later than infants with normal birth-weight.

Wolmuth, G. and Fráter (1965) examined 193 prematurely born children at the age of 6 and 7. They diagnosed mild mental retardation or motor deficit in the case of 91 children and behavioral disorders in 68 children. 71

percent of the examined children had average intelligence quotients; but weak adaptive behaviour and attention deficit can influence good mental ability in a negative way.

Dann et al. studied the development of 100 prematurely born children with low birth-weight. They found that 62 percent of them had lower intelligence than the average.

Drillien examined 50 children born with less than 1300g at school age. 50 percent of them could attend a normal school, while 78 percent had some kind of behavioural disorder.

Many researchers agree that premature infants have disadvantages not only in their somatic development and functions of their sensory organs, but also in their neuro-motor functions and mostly in their psychosocial behaviour.

Wolmuth and Fráter (1973) diagnosed behavioural disorders and adaptation difficulties in 50 percent of prematurely born children. In the background of these problems there were hyperactivity, inhibited psychic tempo and emotional instability.

É. Kovács (1966) reports that 12 percent of 2800 children having behavioural disorders were prematurely born (132 children) and this percentage was the double of the frequency of prematurity in the control group (5.5 percent). 50 percent of prematurely born children were mentally retarded.

According to the studies, prematurity influences the child's psychic development, mainly if there are other pre- and perinatal complications.

Organic problems that decrease the child's tolerance towards the environment are often only temporal. There is often some kind of relation between these problems and the environmental effects. Environmental problems can result in further psycho-reactive symptoms, which can be more serious than somatic disorders.

Rajk, Csiky and Korányi (1979) examined children born with very low birth-weight, (less than 1251g) at the junior school age. Their somatic development was on the expected level given their chronological age. They had no substantial delay in the development of gross motor skills. Their fine motor skills, manual skills and motor coordination were underdeveloped. Examining the intelligence quotient they found psychic symptoms of mild cerebral dysfunction.

Csiky et al. (1981) studied children with very low birth-weight from the aspect of school maturity. These children differ in the factors of school immaturity from the group of children who are also immature to school but for different reasons. "We found that the psychic functions' development of children with very low birth-weight is substantially below expected given

their chronological age, not only from the aspect of intellectual abilities, but of other skills." In this case we can speak about functional disorder and these symptoms can be treated with early, careful, proper therapy, and this disintegrated developmental progress can be harmonized.

According to the results of Falusné, prematurely born children do not differ from full-term born children in their general intelligence. Their verbal skills are normally developed. Their visual-motor and visual-perceptual skills are retarded. Their general mental levels show an uneven distribution. They typically have attention deficits, adaptation disorders and school immaturity at the age of 6. The symptoms of minimal impairment can be found also at the age of 9 and 16 (although they tend to improve).

Czeizel et al. (1978) studied the relations between birth-weight and length of gestation as one of the most essential factors of intrauterine development, and their impact on intellectual development.

Research on the normal population provided a new aspect in interpreting the relation between birth-weight and intellectual development. Douglas (1960) did not find any differences between the groups of children with various birth-weights, even in the group of prematurely born children. Donald (1964) examined many children with a birth-weight of less than 2000g, and he did not find any difference in their IQs either. The research group of Birmingham measured the performance of 41,534 children at the age of 11 on verbal tests. There was a linear relation between full-term born children's birth-weight and their intelligence quotient. Children with a birth-weight of less than 2000g had the lowest intelligence quotient, while children with a birth-weight of more than 4500g had the highest. They also measured the intelligence quotient in one part of the examined children's siblings. There was no significant relation between the children's birth-weight and intelligence quotient within the family.

The research group of Birmingham did not find more than a 1.5 point difference in the IQ when there was 1500g deviation in the birth-weight. "The relation between birth-weight and intelligence can derive rather from the children's social, economic situation which changes from family to family."

This statement of the research group of Birmingham was supported by the results of research with twins (Record et al. 1970).

Kalmár et al. (1984) examined the influence of birth-weight on motor and mental development until the age of three and a half. The premature infants with more than 2000g birth-weight had similar performance as the control group. Premature infants with less than 2000g birth-weight showed a delay in some areas of development. They also studied the impact of parents' education on the development. It did not influence the psycho-motor

development, but it did affect the Binet IQ. Supporting behaviour of the higher educated parents was very important with biologically immature children born prematurely.

Siegel (1985) examined the performance of prematurely born children (1500g) at the age of 7. They showed lower performance than the control group in the task requiring body-hand coordination and visual spatial-memory. The pre- and perinatal complications correlated rather with visual-spatial functions and attention, while social economic status (SES) and the mother's education correlated with verbal performance. Siegel suggested that the intelligence quotient as a global variable was not really informative; it was more worth examining each function with special tests. The intelligence quotient of most prematurely born children was in the normal zone, but function disorders causing learning disorders occurred more frequent in them than in full-term born children.

The results of two Hungarian longitudinal studies showed that the environmental process variable correlated with the intelligence quotient to a greater extent than with the SES (social economic status) in prematurely born children (Kalmár, Boronkai 1991), and it predicted more efficiently the academic achievement (Estefánné Varga, Kalmár 1986, 1989, 1994, 1996).

It is an important question how prematurity influences the performance on school maturity tests. Manual workers' children born prematurely had lower performance than full-term born children who come from the same social milieu and than the intellectuals' prematurely born children. 46 percent of children who were relieved of compulsory school attendance were prematurely born children.

Csiky et al. (1981) examined the school maturity of children with low birth-weight. According to their result there was no delay in the body measures. The development of psychic functions was disharmonic and disintegrated. Attention deficit, hyperactivity, psychic weariness, emotional instability occurred to a greater extent in the examined group.

Vargáné and Szabó (1979) studied factors which influence school maturity and immaturity in children in Budapest. In their research they studied prematurely born children's problem with school maturity, too. According to their results, there was a relation between birth-weight and the child's development. 22 percent of the children who were immature for school were born with less than 2500g, while only 8 percent of the children who were mature for school were born prematurely. Besides biological factors, the environmental and cultural factors and the family's child-rearing attitude are also very important in development. School immaturity has multicausal explanations. The factors of school maturity and immaturity

need to be analysed more thoroughly in order for children to start school without any problems.

Diagnosing school maturity or immaturity is very important in prematurely born children, because uneven development of functions could be a potential basis for learning disorders (P. Balogh, Estefánné 1989, 1991).

As it is widely known in the literature in Hungary and abroad, at the beginning of school, prematurely born children have more problems with the fulfilment of school requirements than their full-term born peers.

It has seemed to be natural for a long time that factors causing premature delivery (e.g.: pathological pregnancy) or effects on the nervous system as biological causes can have later consequences.

According to our knowledge and research (Kalmár 1993, Estefánné 1986) this relationship is not so explicit, because the biological risk factors can be modified or equalized by the environmental effects (family, school).

P. Balogh's different studies on the exploration and improvement of psychic functions that determine learning abilities reinforce the relation between early social economic status (SES) of the family and the development of perceptual motor functions (P. Balogh 1984, 1985, 1987, 1988). SES-handicapped children had a significant delay in their test results measuring body scheme, fine motoric skills and perceptual functions both in the control group and the experimental group (Oseretzky, Bender, Frostig, P. Balogh 1989, 1992; P. Balogh - Estefánné 1988, 1989).

The above mentioned relation suggests that biological risk factors and/or early mother-child relationship – the problems of the family milieu – are in the background of learning disorders which appear at school age. Though it is not well described yet how the latter influences this relation. Researche on prematurely born children (Siegel, 1984, Kalmár, Estefán, 1989, Csiky-Kalmár, 1993, Kalmár, Harkányi, Boronkai, 1992) emphasize the role of interactional characteristics, such as family milieu, intellectual stimulation and a significant effect of child-rearing attitude (P. Balogh, 1993).

Circumstances and methods of our research

1. Aims of the research

The aim of our research was the longitudinal examination of 30 prematurely born children. We intended to answer the following questions:

1. Whether and to what extent does prematurity as a biological risk factor influence the child's psychic and mental development and his/her social integration if the perinatal anamnesis is negative and if there is no other risk factor beside the premature delivery

and the endangered pregnancy? How do social environment and the family's child-rearing influence the child's intellectual development and academic achievement?

In order to answer these questions, we examined the children's intelligence quotient, visual-motor coordination, performance on tests measuring school maturity at the age of 6, and we examined how successful they were at school at the end of the first and the fourth school year.

2. In our research we also wished to determine which tests can predict school maturity and the fulfilment of school requirements.

2. The sample

The sample consisted of 30 prematurely born children (14 boys and 16 girls) from the Child and Youth Counseling Service in Eger. Their perinatal risk level was as follows: the average of the gestation time was 33.9 weeks, the birth-weight was less than 2500g, and the average of the birth-weight was 1885g.

The children of the sample lived in town. The criteria of the selection were the birth- weight and the length of gestation: the birth weight was less than 2500g, the length of gestation was less than 37 weeks and the children had negative perinatal anamnesis.

The early anamnestic data of the examined children came from the maternity ward where they were born and from the therapeutic institutions where they were attended to because of their prematurity. At the age of 6, they were examined in order to measure their school maturity. At the age of 10, they took part in another psychological control examination. We studied how successful they became at school with questionnaires constructed for teachers at the end of the first and the fourth school year.

It became necessary to introduce control pairs in the additional psychological tests of school maturity and in the measuring of success at school. The criteria of selecting control pairs were birth-weight (more than 2500g), length of gestation (longer than 37 weeks), negative perinatal anamnesis and similarity in social economic status (SES).

3. Methods

In this longitudinal study, we collected information from three major fields:

– Information on the child's biological development and environment gained by questionnaire for parents and by different psychological

achievement tests. Psychological achievement tests on the children's mental development.
– Information on the success at school gained by questionnaires for teachers.

a) The collection of data on the child's biological development and environment at the age of 6 and 10

Applied methods:

– our own designed questionnaire for the biological variables
– HOME Inventory (Home Observation for the Measurement of the Environment)
– (By the construction of the questionnaire we used the Home Scale (Caldwell and Bradley, 1979) and some items of Sears, Maccoby, Levin's Child Rearing Attitude Interview, 1957)

Categories of the questionnaire for the parents at the age of 6:

– Biological variables:
  − Pre- and perinatal data
  − Postnatal data
– Environmental variables:
  − Social economical status (SES)
  − Family's child-rearing attitude
  − Intellectual influences
– **At the age of 10,** HOME Inventory for parents (it is an adaptation of HOME Inventory worked out for junior school children,), henceforth "H":
  − Emotional and verbal responsivity (H1)
  − Encouraging reasonable requirements (H2)
  − Emotional atmosphere (H3)
  − Appropriate objects and experiences stimulating development (H4)
  − Active stimulation (H5)
  − Involvement of the family members in experiences stimulating development (H6)
  − Involvement of the father (H7)
  − Characteristics of the physical environment (H8)

b) Psychological examinations of the mental development with performance tests

We examined children in two stages: at the start of the school and at the end of the fourth school year.

Tests at the age of 6:

– Budapest-Binet intelligence test
– Goodenough's drawing test
– Bender-"B" test
– Additional psychological tests to measure school maturity

Tests at the age of 10:

– Wechsler test - HAWIK
– Bender-"B" test
– Brickenkamp's attention test

c) Data on success at school based on the teacher's questionnaire

At the end of the first school year:

Major categories of questions:

- the child's adaptation to school
- work maturity
- judgment of his/her level of mental capacities
- his/her academic achievement at the end of the school year

At the end of the fourth year:

Major categories of questions:

- the child's place in the hierarchy of the class, according to the teacher's opinion
- achievements in subjects
- the attention's durability, concentration ability
- behaviour problems
- academic achievement

4. Statistical analysis of data by computer programs

The applied programs: BMDP 2V, BMDP 4M, BMDP 7M, BMDP PC90.

Interpretation and summary of the results

In our longitudinal research we intended to answer the question whether prematurity as a biological risk factor determines the child's mental development, school maturity, academic achievement and his/her adaptation to school.

We also examined whether environmental effects, social economical status, the family's child-rearing attitude and intellectual effects stimulate or hinder academic achievement. We were interested to determine whether environmental effects or biological factors stimulate the academic achievement to a greater extent. We wanted to know which psychological tests predict academic achievement more effectively.

Summary of the psychological examinations (examinations at the age of 6)

86.6 percent of the prematurely born children's intelligence quotients were in the normal range measured by means of the Binet-test. The average of the Binet test's IQ was 98.5. These results showed that birth-weight did not influence intelligence. The average of the intelligence quotient was 98.3 for the children with a birth-weight of less than 2000g, while the average of the IQ was 99.0 for the children weighing more than 2000g at birth. There was no significant difference between the two averages.

As the IQ as a global variable does not have any significance, each psychic function needs to be examined separately.

In Goodenough's drawing test, 50 percent of the examined children did not perform in the normal zone. The average of the draw quotient (DQ) was 80.3, that is to say, they preformed substantially lower in the drawing test than in the Binet test. This shows that prematurely born children have a delay in their visual-motor development. This is corroborated by data in the literature which shows that prematurely born children have a delay in their visual motor maturity and the development of their psychic functions is uneven. Research on learning abilities confirms that immaturity of perceptual and motor functions and underdeveloped global perceptive apparatus play an important role in the development of learning disabilities.

In the Bender test, the greatest delay was shown in position, direction and relative position. Considering the summated scores, 13.4 percent of the examined children had an average achievement of 6-year-olds. 20 percent managed to achieve the average in position- direction, 23.4 percent in relative position and 43.3 percent achieved the average in the drawing of angles.

Prematurely born children's visual motor coordination is poor comparing to their average intelligence level. 6-7-year-old prematurely born children have a significant delay in their visual motor skills.

Table 1 shows the comparison of the results of the Budapest Binet test (BIQ), the drawing test (DQ) and the Bender test in relation to birth-weight (more than 2000g and less than 2000g).

Psychological test	Weight		
	Less than 2000g	More than 2000g	Total
BIQ	98.3	99.0	98.5
DQ	92.3	84.0	89.3
BENDER			
Total	33.2	28.5	31.5
Angle	31.9	26.6	30.0
Direction	34.3	34.5	34.4
Position	2233	1885.6	32.4
Weight	1684.2	2233.0	1885.6
N=30	N=19	N=11	N=30

Table 1

This table demonstrates that there are no significant differences between the two groups considering the Budapest Binet test measuring the general intelligence quotient. So, birth-weight does not determine the intelligence quotient.

The impact of biological variables on the development

Birth-weight did not correlate with performance on any of the psychological tests, although it had an important role in early development (of movement and speech). Kalmár et al. (1984) found a significant relation between the three-and-a-half-year-old children's IQ and birth weight. As the age progresses, the importance of birth-weight gradually decreases.

There was only a tendency of difference in the drawing test (where $p<0.1$) between the two birth-weight groups (less than 2000g, more than 2000g).

Children born of endangered pregnancy had a minimal advantage (appearing only in one statistic variable) over children born of normal pregnancy, but prematurely. This shows that we cannot predict late consequences of the pregnancy. We can make only cautious conclusions on the minimal advantage of the endangered group. In this group the total points

of the environmental effects, too are higher than in the other group. The environmental effects can involve more care and earlier perception of problems. So the results of the tests can be influenced more directly by these positive environmental effects, and effects of the biological factors may not be manifested in the test results. By all means, early prevention is essential in pregnancy.

Examined fields	Developmental areas					
	Walking X		Speech X		Walking and Speech	
	In time	Belated	In time	Belated	In time	Belated
BIQ	100.7	84.5	101.7	88.5	86.6	98.0
DQ	90.7	79.8	87.4	32.4	83.0	98.0
BENDER						
Total points %	34.4	13	35.6	18.1	13.3	15.0
Total points of the environmental effects	75.4	60.5	70.3	59.7	61.3	60.2
Birth weight	1973.0	1967.5	1924.8	1957.1	1683.3	1652.0
N=30	n=26	n=4	n=23	n=7	n=3	n=3

Table 2

The data on the psychomotor development in Table 2 show that delayed walking and speech development can predict lower intelligence quotient.

The impact of environmental variables on development

The effects of the socio-cultural milieu influence intellectual development substantially. There is a correlation between the Binet IQ, the environmental effects and the developmental data (walking and speech). The partial correlation coefficient also shows a relation between the general intelligence quotient (Binet IQ) and the developmental data, and between the Binet IQ and environmental effects.

According to other research findings, the biological risk factors can be eliminated in proper environmental conditions. Children whose domestic environment is especially stimulating develop advantageously.

Summary of the results of school maturity examination of prematurely born children

56.6 percent of the prematurely born children met the requirements of school maturity.

Poor performance on the Bender test and delay in speech development predict school immaturity the most reliably. Other researchers found a relation also between delayed speech development and later mental development disorders.

There is a significant difference in the performance quotient (PQ) between the groups of school immature and mature children. There is also a tendentious difference in the Binet IQ and in the social economic status (SES). Children in the school mature have higher birth-weights, but this result is not significant.

Categories examined	The results of the examination of school maturity		Total children X
	School immature children	School mature children	
Birth -weight	1970.7	1820.5	1885.6
Gestation time	34.0	33.6	33.9
Environmental effects			
SES	23.2	27.1	25.4
Intellectual effects	20.6	23.0	22.8
Effects of the child's rearing attitude	21.3	24.	22.8
BIQ	94.1	102.0	98.5
DQ	83.2	93.9	89.2
BENDER			
Total	23.0	38.0	31.5
Angle	21.1	36.7	30.0
Direction	25	41.5	34.0
Position	26.4	37.0	32.0
Development of coherent speech in time	46.1	100.0	76.6
	N=13	N=17	N=30

Table 3

School mature children perform better on intelligence tests. **SES seems to play an important role** in this result. Based on the performance of the prematurely born children's group and the full-term born children's control group on the school maturity examination, we can conclude that prematurely

born children perform lower in the performational thinking tasks and visual memory tasks. They also have deficits in the maturity of work, work tempo, attention, concentration ability and drawing ability.

Table 3 shows the factors and other variables which can have an effect on the 30 examined children's school maturity and immaturity.

Relation of variables that influence academic achievement at the end of the first school year

The Bender test's direction variable alone firmly predicts (73.3%) success at school and academic achievement. Besides this variable, the Bender test's other partial points, the Binet IQ test and the DQ also can make a distinction between children who are potentially successful at school and those who are not. The average birth-weight is a little bit higher in the group of potentially school-successful children, but this difference is not significant.

Children who are potentially more successful at school are in a more advantageous situation regarding SES and the effects of an intellectual stimulating environment.

National and international research also corroborates our results, that is, supporting environmental effects help academic achievement and success at school (Kalmár-Estefánné 1988, Kalmár 1992, 1993).

Examining adaptation to the community, we could see that environmental effects influence success of adaptation to a great extent and they also help to achieve higher mental performance.

There are significant differences between children who can adapt well and those who do not in the results of the intelligence tests, in the total points of the environmental and intellectual effects and in the effects of the child-rearing attitude.

One single test variable can predict firmly (with 70-80 percent probability) the problems at school indicated by teachers. The variable which proves to be the firmest predictor can change from problem to problem (the Bender test's position variable in 6 cases, the DQ as variable in 4 cases, the Bender test's direction variable in 3 cases, the Binet IQ only in one case- it predicts mathematical problems).

Again, the following factors account for these problems: disadvantageous SES, less stimulating intellectual effects and less tolerant and restrictive child rearing attitudes.

The prematurely born children's group had the greatest difficulty in reading. This can derive from poor visual memory and the immaturity of the comprehension of position and direction. Although the results above should

be very interesting, the small size of the sample does not permit any general conclusions.

Poor performance on the Bender test could be a predictor of dyslexia for prematurely born children, because we may also reckon with disorders of spatial perception analysis and synthesis. Prematurely born children perform lower in eye-hand coordination, visual spatial organization, short term memory and attention, which can cause functional disorder, which may result in learning difficulties later.

The psychological tests' results and the outcomes of the pedagogical control examination justify the assumption that prematurely born children's mental development is uneven and disintegrated. This type of development affects not only the psychic and mental functions but it also influences academic achievement and adaptive behaviour.

Categories examined	Success at school		
	Successful	Unsuccessful	Total children
Birth- weight	1930.95	1780.00	1885.66
Gestation time	34.00	33.77	33.93
Environmental total points	75.42	59.00	70.50
SES	27.47	20.65	25.43
Intellectual effects	24.28	17.88	22.36
Effects of the rearing attitude	23.76	20.66	22.83
BIQ	102.42	89.66	98.59
DQ	93.09	80.44	89.29
Bender total points	35.85	21.44	31.53
Bender angel	34.09	20.44	30.00
Bender direction	40.00	21.44	34.43
Bender position	36.47	22.33	82.23
	N=20	N=10	N=30

Table 4

By means of factor analysis, two major factors from all the measured variables emerged. The components of the first factor with highest correlation coefficients (in order) are: Binet IQ, environmental effects, early

development, the Bender test, DQ and birth-weight (with minimal value). This factor accounts for 44 percent of the variance.

The second factor consists of the gestation time and birth-weight. This factor accounts for 67 percent of the variance. The first factor determines school maturity and success at school.

According to the data in Table 4, children who are successful at school have a little higher birth-weight and more advantageous environmental effects. Their performance is higher on intelligence tests.

Results of the follow-up examination at the age of 10

The aim of the final examination was to explore children's academic achievement at the end of the junior classes. We wished to know how their intelligence develops and whether prematurity as a biological risk factor influences their performance at school. We were interested in how the environmental effects and the joint effects of the family and school can modify academic achievement.

At the final examination only 26 children were available from the 30 prematurely born children. 4 children dropped out. Two children attended a special school, one child moved and the parents of one child did not require the examination.

The three categories of the final examination:

1. Environmental effects within the family: HOME Inventory
2. Psychological tests:
   Wechsler test-HAWIK
   Bender B test
   Brickenkamp's attention test (d2)
3. Questionnaire for teachers on academic achievement

We introduced control pairs in the examination of academic achievement.

Within the prematurely born children's group we formed two groups on the basis of academic achievement:

- group of high performers
- group of low performers

a, Comparison of academic achievement of prematurely born children and of the control group with t-tests

According to the statistical results, the group of prematurely born children and the control group did not differ in their academic achievement.

There was a tendentious difference between the groups considering the teacher's judgment on permanence of attention and concentration. There was a tendentious difference considering interest ($p<0.10$). As there were no significant differences between the groups, we did not analyze the data in detail.

b, Analysis of examination data of prematurely born children

It seemed necessary to analyze prematurely born children's results in more thoroughly.

Firstly, we studied the relations with t-tests on one single variable. We examined the different results of the two groups of prematurely born children (the groups of high and low performers) with t-tests. We compared the results of the two groups on the HOME Inventory's total points and subscales and the performance on the psychological tests.

Then we computed correlations with the environmental variables that influence the results of the psychological examination and academic achievement.

In the second step, it became necessary to apply multivariate regression analysis, then we used discrimination analysis to distinguish the groups of high and low performers.

Comparison of high and low performers with t-tests

The aim of our research was to explore how environmental effects influence academic achievement. We found significant differences in the subscales of the HOME Inventory between the groups of high and low performers.

There were significant differences in the following subscales for the advantage of high performers:

H1. Emotional and verbal responsivity ($p<0.01$)

H6. Involvement of family members in experiences stimulating development ($p<0.001$)

There were tendentious differences in the following HOME Inventory's subscales:

H2. Realistic requirements ($p<0.10$)

H4. Appropriate objects and experiences stimulating development ($p<0.10$)

H8. Characteristics of the physical environment ($p<0.10$)

The family's emotional atmosphere, speech culture and the common experience of parents and children have a positive impact on academic

achievement. Realistic requirements and a colourful physical environment also have a positive influence.

There was a significant difference in the total points of the HOME Inventory ($p<0.02$) for the advantage of high performers There was a tendentious difference in SES.

The average of the HOME Inventory's total points in Table 5 shows that high performers had more points:

High performers	48.83
Low performers	41.00

Table 5

Study of intelligence with the HAWIK test

Table 6 shows the average of the performance on the HAWIK test:

	IQ	VQ	PQ
Average of all children	104.77	106.66	102.38
Average of high performers	110.39	112.94	106.17
Average of low performers	92.13	92.50	93.88

Table 6

The different intelligence quotients in HAWIK also distinguish the groups of high and low performers, there is a significant difference in IQ ($p<0.001$) and VQ ($p<0.0001$) but in PQ ($p<0.10$) the difference is moderate. These results are consistent with results in the international literature.

Rank of environmental variables that determine academic achievement and intelligence according to the correlation coefficients

Table 7 shows the ranks of the HOME Inventory's variables and the SES variable, which have an impact on the intelligence and performance in different subjects. (This ranking contains the tendentious associations, too.)

Performances	Environmental variables							
	1	2	3	4	5	6	7	8
HAWIK IQ	H1	H4	H8	SES	H5	H2	H3	H6
HAWIK VQ	H1	H6	H4	H2	SES	H8	H5	H3
HAWIK PQ	H1	H4	SES	H8	H5	H3	H2	
T(d2) attention	H6	H1	H4	H3	H2	SES	H5	H8
Mathematics	H1	H6	H3	SES	H8	H2		
Ecology	H6	H1	H6	H4	SES	H8		

Table 7 (H= subscales of HOME Inventory from 1-8, SES= social economical status)

There is either a significant or tendentious correlation between the results of the IQ and the VQ and all the environmental variables, except for H7 (involvement of the father in child-rearing).

The IQ had the strongest correlations with H1, H4 and H8 (emotional and verbal responsivity; appropriate objects and experiences stimulating development; characteristics of the physical environment). The VQ had the strongest correlation with H1, H6, H4 (emotional and verbal responsivity; involvement of the family members in experience stimulating development; appropriate objects and experiences stimulating development). Concerning PQ, the three highest values are H1, H4 (emotional and verbal responsivity, appropriate objects, experience stimulating development) and SES; H6 and H7 do not occur (involvement of the family members in experience stimulating development; involvement of the father).

Considering the attention test, the strongest environmental variables were H6, H1, H4 (involvement of the family members in experiences stimulating development; emotional and verbal responsivity; appropriate objects and experiences stimulating development) while H7 (involvement of the father) does not occur.

The rank of influence of environmental variables on performance in different subjects:

Mathematics: H1, H6, H3 (emotional and verbal responsivity; involvement of the family members in the experiences stimulating development; emotional athmosphere) H7, H4, H5 do not seem to play any role (involvement of the father; appropriate objects, experience, variety in stimulation).

Hungarian: H1, H4, H5 (emotional and verbal responsivity; appropriate objects and experiences stimulating development; variety in stimulation) H7 does not occur (involvement of the father).

Ecology: H6, H1, H3 (involvement of the family members in experience stimulating development; appropriate objects, experiences stimulating development; emotional athmosphere) H7 and H5 do not occur (involvement of the father; variety in stimulation).

To summarize the rank of environmental variables that influence the results of psychological examinations:

H1 (emotional and verbal responsivity) is ranked highest three times, H6 (involvement of the family members in experience stimulating development) is ranked highest once, H4 is renked second twice (appropriate objects and experiences stimulating development) H6 (involvement of the family members in experiences stimulating development) and H1 (emotional and verbal responsivity) are ranked second once. H4 (appropriate objects, experiences stimulating development) is ranked third twice, and SES and H8 (characteristics of the physical environment) once.

To summarize the rank of environmental variables influencing performance in subjects:

H1 (emotional and verbal responsivity) is ranked highest twice, H6 (involvement of the family members in experience stimulating development) once. H6, H4, H1 (involvement of the family members in experience stimulating development; appropriate objects and experiences stimulating development; emotional and verbal responsivity) are ranked second once. H3 (emotional climate) is ranked third twice and H6 (participation of the family members in experience stimulating development) once.

H1 (emotional and verbal responsivity) is the most important subscale of the HOME Inventory (it is ranked first five times and it is ranked second twice). H6 (involvement of the family members in the experience stimulating development) is ranked first twice and ranked second twice. H4 (appropriate objects, experience stimulating development) is ranked third three times.

Ranks of the test results as predictors of academic achievement:

Subjects	Tests
Mathematics	VQ, T
Hungarian	VQ, T, PQ
Science	VQ, T, PQ

Table 8

The ranking presented in Table 8 shows that the VQ and the result of the attention test (d2) can predict performance in mathematics, while besides VQ and the attention test PQ can also predict performance in Hungarian and ecology. The rank of the tests draws attention to the fact that VQ has the most important role in predicting performance in different subjects, followed by the results of the attention test and PQ as predictors.

IQ does not play any role in the prediction according to the correlation calculation. We assume that the environmental variables support this significant role of VQ. The effects of school strengthen the effects of the family. So the role of VQ is the most important in the prediction of academic achievement.

The predominance of verbal performance is highlighted as an academic requirement.

Gestation time as a biological variable correlates negatively with the scores of the HOME Inventory, which might be the reason that it also correlates negatively with academic achievement. Gestation time correlates significantly with achievement in mathematics, drawing, mathematics rank, reading rank, and spelling rank. It correlates tendentiously with Hungarian, ecology, and technology.

Gestation time correlates negatively with the results of the psychological tests, with IQ, VQ, PQ, and the results of d2, but this correlation is not significant.

According to the correlation computations prematurity does not determine the results of the psychological tests or academic achievement, but **the environmental effects have a prominent role.**

There could be a substantial relation among potentially decisive variables, which justifies a multivariable analysis. Dependent variables of the analysis are the results of the psychological tests, academic achievement, and the rankings of subjects. Independent variables are SES, the subscales of the HOME Inventory and gestation time.

We were most interested in which environmental and biological variables are determinant. Table 9 shows the results of the analysis: which independent variable predicts significantly the dependent variables and which variables are determinant in themselves in this differentiated analysis.

The results demonstrate that H6 (involvement of the family members in experiences stimulating development), H4 (appropriate objects, experience stimulating development), and H8 (characteristics of the physical environment) subscales of the HOME Inventory can explain the results of the psychological tests.

Dependent variables, psychological tests		Significant predictors (independent variables)R2		Percentage of the explained variance multiple R2	
Attention test	d2	HOME	6	0.57	0.64
		HOME	4	0.07	
HAWIK	IQ	HOME	1	0.59	0.68
		HOME	8	0.09	
HAWIK	VQ	HOME	1	0.48	0.48
HAWIK	PQ	HOME	1	0.46	0.57
		HOME	8	0.11	

Table 9

Table 10 represents the environmental variables that account for academic achievement and the ranking of subjects: H1 (emotional and verbal responsivity), H5 (variety in stimulation), H8 (characteristics of the physical environment) and SES (social economic status).

Dependent variables (the position of the subjects in the ranking)	Independent variables (the significant predictors, SES Home subscales)	Percentage of the explained variance	
		R2	Multiple R2
Mathematics	H1	0.29	
	H5	0.13	
	Gestation time	0.13	0.66
	H6	0.11	
Hungarian	H1	0.40	
	H6	0.11	0.59
	Gestation time	0.08	
Science	H6	0.38	
	Gestation time	0.17	0.59
Technology	SES	0.41	
	Gestation time	0.11	0.51
Draw	Gestation time	0.34	
	H8	0.11	0.45
Music	Gestation time	0.44	
	SES	0.18	0.62
Mathematics rank	H1	0.27	0.27
Reading rank	H6	0.29	
	Gestation time	0.25	0.54
Spelling rank	H1	0.34	
	H6	0.10	0.55
	Gestation time	0.11	

Table 10

Gestation time as a biological variable occurs with every subject and in the rank of subjects except in the mathematics rank.

We also examined to what extent the results of the psychological tests influence the performance in different subjects. Table 11 summarizes our results:

Dependent variables	Significant predictors	R2, Multiple R2
Mathematics	VQ	0.36
Hungarian	VQ	0.43
Science	VQ	0.48

Table 11

We can see that VQ has an important role as a predictor in the performance of subjects. IQ, d2 and the Bender test do not function as predictors.

We examined with stepwise multiple discriminant analysis which variables can distinguish high and low performers within the group of prematurely born children. Potential variables that have discriminant function are the variables which have already indicated difference earlier in the examinations.

The differentiation of high and low performers

Variables: gestation time, SES, HOME Inventory's subscales, IQ, VQ, PQ, Bender test, attention test (d2).

The rank of significant variables involved in the differentiation of high and low performers is as follows (on the basis of their strength): VQ is first, d2 test is second and the Bender test's direction and orientation variables are third.

The rating percentage is 100 percent.

The results of the discriminant analysis demonstrate that in this study VQ has the greatest percentage of the explained variance in the differentiation of high and low performers, while IQ and PQ do not play any role.

T-tests already indicated the unimportance of IQ, but PQ still appeared in it, albeit tendentiously.

Besides VQ, the second variable (on its strength) is the attention test which was also important in the t-tests.

In the discrimination of performances the direction-position variable of the Bender test is significant, while this test did not appear in the t-tests.

In the examinations at the age of 6-7, the Bender test had an important role in the prediction of success at school; the most significant variable was

direction-position. This variable also appears as the third variable in the differentiation of performance in the examinations at the age of 10.

We also wished to know which variables can predict the differences in performance besides the psychological tests. We examined the differentiation of high and low performance at school with discriminant analysis with the exclusion of the results of the psychological tests. (The applied variables were the HOME Inventory's subscales, gestation time and SES.)

The variables which play a significant role in the differentiation are H6, which stands first (involvement of the family members in experience stimulating development) and gestation time, which took the second place.

The rating percentage is 88 percent in this case.

The analysis emphasises that H6 (involvement of the family members in experiences stimulating development) can articulate the differences, the perinatal circumstances can influence only secondarily, and SES does not seem to affect it.

Summarizing the variables which can distinguish high and low performance:

- The rank of the **performance tests**: VQ, d2, Bender direction, position
- **Environmental factors**: H6 (involvement of the family members in experiences stimulating development)
- Biological factors: gestation time

As **the attention test is the second strongest predictor besides VQ,** we examined its role in connection with intelligence and academic achievement.

The substantial correlations of the attention test:

There is a correlation (r=0.64) between the result of d2 and the teacher's judgment of students' attention (its durability and concentration ability). Both attention variables (d2 and teacher's judgement) correlate with VQ (r=0.68 and r=0.67) as well as PQ (r=0.36 and r=0.38).

The variables of attention correlate with academic achievement, and this correlation is stronger with important subjects than with intelligence. The teacher's judgement on attention correlates more with academic achievement than with the results of the attention test (d2).

Summary

We can summarize the results of our examinations as follows:

We proved in our research that it occurs more frequently in prematurely born children than in full-term born children that they cannot cope with the tasks they have to face when they start school. According to the test results, children with problematic development have a significant delay in visual-motor coordination, which corresponds to teachers' experience that their visual memory is poor and they have problems learning to read. Attention deficit stands in the background of both the test results and the problems at school. These difficulties do not affect every prematurely born child.

In the examinations at the age of 10, environmental effects in the family have an important role in the differentiation of high and low performers. Gestation time as a biological variable also functions as a predictor to a lesser degree.

Our sample was very diverse in perinatal, gestation time, birth-weight, peri- and postnatal events. However, it was not these biological factors, but personal and material conditions in the family's environment that were significant in influencing academic achievement.

Our results reinforce the fact emphasized by several researchers that the impacts of similar perinatal biological complications such as prematurity and very low birth-weight could have different effects on the development because of the environmental conditions. A favourable family background can decrease or eliminate the negative consequences of these biological complications, while disadvantageous social circumstances can aggravate the consequences.

In the prediction of learning abilities the **Bender "B" test** plays an important role at the age of 6-7. The Bender test's direction variable preserves its predictive function, albeit to a lesser extent, until the end of the junior school age. Goodenough's drawing test and the Binet test also play a role in the prediction of academic achievement, but to a lesser degree than the Bender test.

In the psychological examinations at the age of 10, HAWIK VQ is the first variable in the differentiation between high and low performers, d2 attention test is second.

The parents' education and the intellectual effects of the environment as SES variables have a prediction function in the development of prematurely born children at the age of 6-7. At the age of 10, SES preserves its predictive function, but one HOME Inventory subscale, the involvement of the family

members in experiences stimulating development, is the most significant predictor.

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ZSUZSANNA HANÁK

ENHANCING THE CHANCE OF CONTINUATION OF STUDIES IN A DISADVANTAGEOUS REGION (2000-2005)

Introduction

The educators of Eszterházy Károly College have been investigating the problems of pupils in danger of school failure and lack of success, the questions relating to career guidance and methods of individual treatment.

The present research is carried out in the framework of the research project „Útkereső" (Pathfinder).

The aim of the research: the analysis of the special problems which may arise in schools (town-village) educating pupils with a multiply disadvantaged social background, how it is possible to help the social integration of pupils with disadvantaged background through revealing these problems.

Research sample: 131 teachers

The selection criteria of the primary schools were as follows:

- the proportion of students taking part in further education is bellow the national average (KSH)
- the settlement is not to have a secondary school
- the number of endangered students in the school is above the average in the region
- the number of the teaching staff does not exceed 40
- the primary school is teaches pupils with normal mental capacity

Research methods: questionnaire

The revealing of the problem is focused on the following subjects:

- Problems concerning the students
- Problems concerning the teaching institution
- Problems relating to the school environment

Results

Problems concerning the students

According to the teachers of village schools, the most serious problem is the pupils' social background and students' psychic condition. Their average is 1.4, which means that they consider these factors to be a very serious problem. They put second pupils with disadvantaged backgrounds, the average score is: 1.6. This shows that the teachers consider it a very serious and important problem. Placed third is the mental capacity of the pupils with a score of 1.7. This comes also close to the most important problems. The school achievement and the problems relating to the pupils in danger occupy the fourth place with the score 1.8. This comes also close to the important problems. School attendance is scored 2.2, while the health condition of he pupils is scored 2.8. All these results indicate the seriousness of the problems.

The number of pupils in the school is 38, which seems to be easy to handle.

According to the opinion of the town school teachers, endangered students represent the most serious problem: 1.8, and the pupils with disadvantaged backgrounds: 1.9. Teachers consider them significant problems. They put close to the above problems the mental capacity of the pupils with the score: 2.1, the social background of pupils, personal characteristics and psychic condition: 2.2. Average and significant problems are the pupils' school achievement, health condition: 2.4 and school attendance: 2.5. The number of pupils in the school seems to be easy to handle.

Number of the problem	Problems concerning the students	Score		Ranking	
		Town	Village	Town	Village
1	The number of pupils in the school	3.30	3.80	**7**	**7**
2	School attendance	2.50	2.20	**6**	**5**
3	Disadvantaged background	1.90	1.60	**2**	**2**
4	Endangered students	1.80	1.80	**1**	**4**
5	The pupils' social background	2.20	1.40	**4**	**1**
6	Mental capacity	2.10	1.70	**3**	**3**
7	Personal characteristics	2.20	1.60	**4**	**2**
8	School achievement	2.40	1.80	**5**	**4**
9	Health condition	2.40	2.80	**5**	**6**
10	Psychic condition	2.20	1.40	**4**	**1**
---	Total average score	**2.30**	**2.05**	**---**	**---**

Problems concerning the teaching institution

The village teachers think their financial position is the most important factor among the problems concerning the teaching institution: 2.0. The technical equipment of the schools is scored with an average of 2.9. The financial management of the school is scored 3.1.

Possibilities for in-service trainings and the condition of school buildings are scored 3.2.

In-school communication and conflict solution are not considered to be relevant problems: 3.9. The number of specialists at school is scored 4.0. The management of the school is scored 4.5 and the staff atmosphere is scored: 4.7.

According to the opinion of the town school teachers, the condition of school buildings is the main problem concerning the teaching institution: 1.7. They placed second the problem of their financial position: 1.9. Teachers consider them significant problems. The technical equipment of the schools is a significant average problem: 2.6. The financial management of the school is scored very similar: 2.8. Conflict solution: 2.9 and the staff atmosphere: 3.0 are average problems. The management of the school and in-school communication are scored: 3.1. The number of specialists at school and possibilities for in-service trainings seem to be easy to handle: 3.5.

Number of the problem	Problems concerning the teaching institution	Score		Ranking	
		Town	Village	Town	Village
1	The number of specialists	3.50	4.00	**8**	**6**
2	In-service trainings	3.50	3.20	**8**	**4**
3	Staff atmosphere	3.00	4.70	**6**	**8**
4	Condition of school buildings	1.70	3.20	**1**	**4**
5	Technical equipments	2.60	2.90	**3**	**2**
6	Financial position (salary)	1.90	2.00	**2**	**1**
7	The financial management	2.80	3.10	**4**	**3**
8	Management of the school	3.10	4.50	**7**	**7**
9	In-school communication	3.10	3.90	**7**	**5**
10	Conflict solution	2.90	3.90	**5**	**5**
---	Total average score	**2.80**	**3.50**	**---**	**---**

Problems relating to the school environment

The most important problem in this sphere in village schools is the unemployment of parents with an average of 1.1. A similar important problem is the educational level of the parents: 1.3. The parents' lifestyle seems to be also a significant factor: 1.6, home environment of the pupils and the way they spend their free time is scored 1.7. The economic situation of the settlement is scored very similar: 1.8. The attitude of the families to the school is scored 1.9. The management of the settlement is scored 2.4, which is rather significant. Close to the average score are the work of social helpers and the geographical situation of the settlement.

According to the opinion of the town school teachers, the unemployment of parents is the most important problem relating to the school environment: 1.6. Following problems are the educational level of the parents, home environment of the pupils and the parents' lifestyle: 1.8. The way the pupils spend their free time: 2.2 is a significant problem. The attitude of the families to the school is also a significant problem: 2.1. The management of the settlement seems to be an average problem: 2.9. The economic situation of the settlement and the work of social helpers scored 3.0. The geographical situation of the settlement seems to be a problem easy to handle: 3.4.

Number of the problem	Problems relating to the school environment	Score		Ranking	
		Town	Village	Town	Village
1	Unemployment of parents	1.60	1.10	**1**	**1**
2	The educational level of the parents	1.80	1.30	**2**	**2**
3	Home environment of the pupils	1.80	1.70	**2**	**4**
4	The parents lifestyle	1.80	1.60	**2**	**3**
5	The way the students spend their free time	2.20	1.70	**4**	**4**
6	Geographical situation of the settlement	3.40	2.50	**7**	**8**
7	Economic situation of the settlement	3.00	1.80	**6**	**5**
8	The management of the settlement	2.90	2.40	**5**	**7**
9	Social helpers of the settlement	3.00	2.50	**6**	**8**
10	The attitude of the families to the school	2.10	1.90	**3**	**6**
---	Total average score	**2.36**	**1.90**	**---**	**---**

On the bases of the research results, we came to the following conclusions:

Among the problems concerning the pupils, the most important are the pupils' social background and psychic condition. The following factors represent vital problems: the deviant elements in the pupils' personality,

disadvantaged background, endangered position, and mental capacity of the pupils. All these contribute to achievement. This situation is aggravated with irregular school attendance and health problems. The number of students in the class seems to be adequate.

One of the most important problems in the work of the teaching institution is the financial situation of the teachers and technical equipment of the school. The financial management of the school and the in-service training possibilities get average ranking. The teachers feel no problem in school communication and in the handling of conflicts. They consider the atmosphere of the staff and the work of the school management to be very good.

Among the problems relating to the school environment, the most important is the unemployment of parents and the very low level of education of the parents. The lifestyle of the parents and the home environment also represent serious problems.

The present research is carried out in the framework of the research project „Alma mater".

The project aims are twofold:

On the one hand, it supports the successful further education of disadvantaged students with special training programmes, and on the other hand, it trains the teachers to run the programme.

The programme is concerned with the following groups:

Disadvantaged students in Northern Hungary, the parents of the students, the teachers and fellow student helpers involved in the programme.

The selection criteria of the primary schools were the following:

1. the proportion of students taking part in further education is bellow the national average (95.9% 1998/1999, KSH)
2. the settlement does not have a secondary school
3. the number of endangered students in the school exceeds the average in the region (5% 1998/1999, KSH)
4. the number of the teaching staff does exceed 40
5. the primary school teaches pupils with normal mental capacity

The selection criteria of the secondary schools were the following:

1. the number of commuting students exceeds the average in the region (45% 1998/99 KSH)
2. the number of students living in dormitories is above the average in the region (20% 1998/99 KSH)
3. the dropout proportion (the proportion of those entering the school and finishing the school) is above the national average in the case of secondary grammar schools (8.5% 1998/99, KSH)
4. the dropout proportion (the proportion of those entering the school and finishing the school) is above the national average in the case of secondary technical schools (3% 1998/99, KSH)
5. the dropout proportion (the proportion of those entering the school and finishing the school) is above the national average in the case of vocational schools (31.6% 1998/99. KSH)

In revealing the problem, we came to the following results:

1. Primary school teachers have no adequate analytic methods in their competence to be able to reveal the disadvantaged situation and learning difficulties in time, and at the same time are not properly prepared to support the further education of problematic students.
2. Parents of the primary school pupils (especially those of the disadvantaged ones) do not take an active part in discussing the questions relating to their children's further education.
3. Disadvantaged primary school pupils are not demanding in their choice of carrier, they do not know their own interest and possibilities and do not pay sufficient attention to them.
4. The further education of these students is not the result of a mutually (parent, teacher, student) decided and accepted action.
5. In secondary schools, the fit-in of these problematic students goes with difficulties and therefore the dropout rate is high.
6. Secondary school teachers are not prepared to tackle the problem of fitting in, they have difficulties in finding the values and problems of the new students.
7. There are no fellow student helpers in the secondary schools who, being of the same age, could give support in this transitional period.
8. There is no individual or group counselling in secondary schools, where students could resolve their problems with the help of specialists.

These problems cause difficulties in carrier choice, in the fitting into the secondary school, in the achievement of students in disadvantaged situation and, as a result, they do not meet the demands of the labour market. Unemployment pushes them to the periphery of society, and then the same problems are reproduced in the life of their children.

In view of the above problems, the specialist team and the teachers of primary and secondary schools worked out the following programme:

1. For the carrier planning of primary school students two trainings are worked out. *"Path finding"* and *"Where to go".*
   The aim of the *"path finding"* training is to help primary school pupils in their carrier choice, to find their own values, potentials and limits.
   The aim of the *"where to go"* training is to involve the students, the parents and the teachers in discussions about the further education of school leaving students. These training methods provide possibilities for discussions without any obligations.
2. *An information booklet is prepared for the parents* of primary school pupils. This information booklet gives useful information about carrier planning for the parents. This and *"where to go"* training together help parents make the decision.
3. For teachers in primary schools, we made up a *collection of investigating methods* containing questionnaires, tests, which they can use on their own.
   In addition to this, the *"support training*" provides further help for common thinking.

The aim of the training is to help the teachers in the work of carrier planning.

The primary school teachers had already took part in the *"where to go"* programme.

4. For the students entering the secondary school, we have prepared a group of *fellow student helpers*, in this way the elder students are already prepared to meat the disadvantaged students in their school.
   The importance of fellow student helpers in adolescent age is significant. They can authentically offer solutions to problems they themselves had to experience some years before.
5. We prepared *fit-in training* for disadvantaged students in secondary schools. In theses trainings, specialist conduct conversations, which help the student in the transitional period between primary and secondary school.
6. We prepared an *"introducing booklet"* for secondary school teachers, which gives a summary about the students entering the

secondary school written by the student, the parents and primary school teachers of the student. The slogan of the booklet is *"This is me"*.

For teachers of secondary schools, we have made up a *counselling training*, the aim of which is to provide basic counselling units. This helps the teachers to take part efficiently in the work with students coping with problems, and at the same time helps them to choose individual learning programmes and assist the student with it in future.

Expected results:

For the students:

1. The number of drop-out students in the transitional period will decrease
2. A more adequate carrier choice based on the abilities of the individual – the experience of success – the chance of getting out of the situation.
3. The fit-in process in the secondary school will be easier, and will go smoothly.

For the families (parents):

1. The number of those wishing to take an active part in the formation of the children's future will increase.
2. They will have a clear picture about the possibilities to form the picture in their children.

For the teachers:

1. New competences will be acquired.
2. Carrier planning will be better established.
3. Cooperation between primary and secondary schools will be more efficient.

FERENC MEZŐ

LEARNING DIAGNOSTIC AND DEVELOPMENTAL ASPECTS OF THE IPOO-MODEL

In our days, we can observe an increasing interest in development and diagnostics in Hungary. The manifestations of this interest are:

a) the numerous requests of the schools, education institutions and organizations, teachers, parents and students for the learning researchers that they show and teach effective learning methods to teachers and pupils/students. In Hungary we organise trainings for learners (from elementary school to university) and for teachers and parents.
b) the increasing number of books on learning development may be significant, because the law of supply and demand shapes bookselling.
c) learning development is a compulsory or elective course in several Hungarian universities and colleges of teachers education.

An important and necessary component of learning development is learning diagnostic. It helps to identify and measure learning problems, the goals of development and the effectiveness of development.

In the past few years, we have worked out a new and useable learning model for effective diagnostic and developmental work. Let us call it briefly the IPOO-model.

The aim of the present study is to demonstrate how we can work with the IPOO-model in learning diagnostic and development. This study consists of three parts. First, we have to define some basic concepts. In the second part, we present the IPOO-model of learning. Finally, we give some examples of using the IPOO-model.

Basic concepts

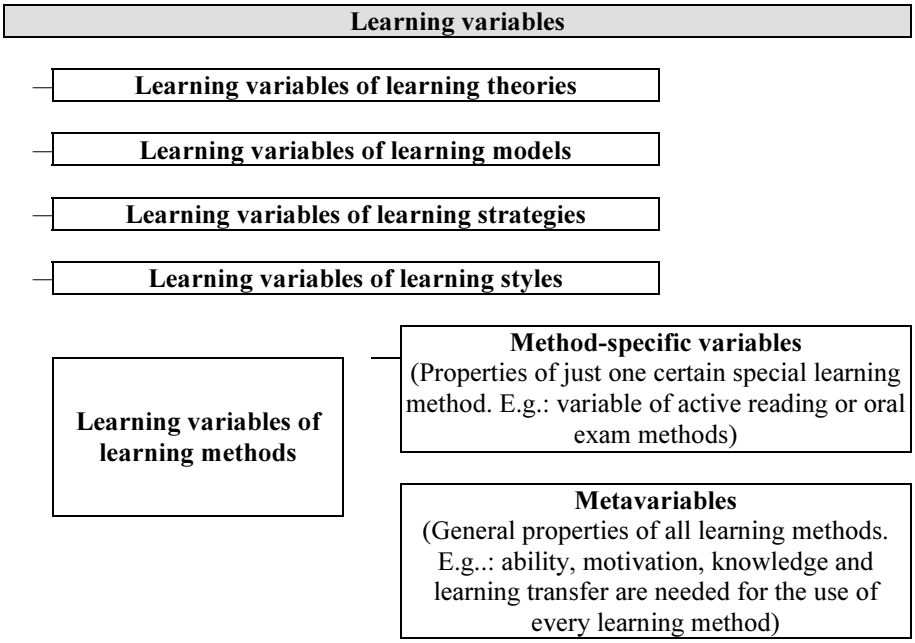
Below we will describe the concepts of the learning variable, learning diagnostic, learning development and learning ideal.

Learning variable: It is a sort of property of learning. It is a simple statistical (nominal, ordinal or quantitative) variable with two or more different values. For example, the 'Time of Learning' ordinal variable has three different values: 'too much', 'enough' or 'not enough'. If this variable

is a quantitative variable, we can measure the seconds, minutes or hours of the learning. Learning developers have to choose and determine the applied learning variable and its type of statistical scale and values for learning diagnostic and development.

A great many multitudinous learning variables have been described. Figure 1 shows a simple grouping of these. The first group of Figure 1 shows the variables of learning theories. These theories – e.g., the theory of classical conditioning (Pavlov, 1927) and operant conditioning (Skinner, 1974), etc. – try to describe the general process and acts of learning. Their learning variables, among others, are the following: stimulus, response, duration of conditioning, reinforcement, schedules of reinforcement, etc.

Figure 1: Principal groups of learning variables (Mező and Mező, 2005: 11)



Another group is the variables of the learning models. These try to describe and predict school learning. For example, Carroll's model uses the following learning variables: learning efficacy = duration of learning / necessary learning-time (Carroll, 1963).

Learning strategies are patterns of information processing activities (Das, 1988). A learning strategy is the battery of some special learning actions. (The term 'strategy' was originally a military term that referred to procedures for implementing the plan of a large-scale military operation –

Schmeck, 1988: 5.) For example, Claire Weinstein (1988) describes five different strategies. These are: rehearsal, elaboration, organizational, comprehension monitoring, affective strategies.

According to Schmeck, "if ever we observe that an individual has an inclination to use the same strategy in varied situations, we can suspect the presence of a style" (Schmeck, 1988: 7-8). Learning styles try to describe the bio-psychological, cognitive and motivational properties of learning and/or the learners. As Katona and Oakland (1999) write, we can find three groups of theories of learning styles: 1) the basis of some theory is the biological differences (e.g., dominance of the left or right brain hemisphere – Torrance and Rockstein, 1988); 2) the basis of other theories is the differences of the cognitive styles (e.g., Witkin's 'field-dependent' and 'field-independent' styles or Pask's 'holist' and 'serialist' styles or Marton's 'holistic' versus 'atomistic' styles, etc. – see Schmeck, 1988); 3) some theories build on the motivational differences (e.g., 'Hope for Succes' or 'Fear of Failure').

The last group of the learning variables concentrated on learning methods. We can distinguish two types of these variables (Mező and mező, 2005): method specific variables and metavariables. Method specific variables can be used in just one special learning method (e.g., variable of the active reading or the oral exam methods). Metavariables are useable with all learning methods. For example, every learning method needs a sort of ability, motivation, knowledge and learning transfer.

Direct learning development and diagnostic aim at the development of the variables of the learning methods, the last group of the learning variables (the 'indirect' learning development objectives are the learning abilities – Balogh et al., 2001).

Learning diagnostic: measurement of the value of a learning variable with psychological and/or pedagogical methods (for example: observation, experiment, interview, content analysis, questionnaire, test).

Learning development: adjustment of the ideal value (the 'learning ideal') of a learning variable. Figure 2 shows the relationship between learning diagnostic and development. The objective of the 'pre test' is to determine the kind of learning problems. The objective of learning development is to put an end to the learning problem. The objective of the 'post test' is to control the effect of the learning development.

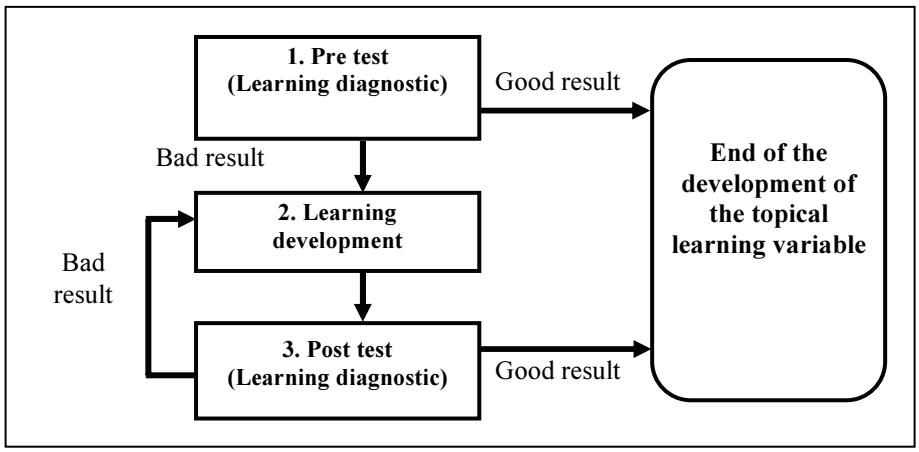


Figure 2: The relationship of learning diagnostic and development (Mező and Mező, 2005: 8)

Learning ideal: a special value of a learning variable, which is the goal of the learning development. The developers determine the ideal value of a learning variable. We can see that determining the ideal value of a learning variable is considerably subjective.

The IPOO-model of learning

According to the IPOO-model (Mező, 2002, 2004), school learning is an information processing procedure, and it has four components:

- Input (I): from selecting the theme to effective reading techniques.
- Process (P): from mnemotechniques to the holist system of knowledge.
- Output (O): from oral or written presentation to everyday skills.
- Organising (O): organising of learning (time, place, money, systematically, legalisation of knowledge, etc.)

Every phase is built on the basis of special abilities, motivations, methods. These phases are in a special connection with each other:

LEARNING = (INPUT + PROCESS + OUTPUT) * ORGANISING

In this formula, the plus sign (+) adverts that the value of the input, process or output component (as learning variable) may be zero. For example: if somebody learns some foreign words (so input is given), but she

or he never uses those (has no output; in other words: the value of the 'output' variable is zero), we will talk about learning (without output).

The symbol of multiplication (*) adverts that if any of the values of the factors of the multiplication is zero, then the result (of the learning) will be zero. For example, learning without organising is impossible. Somebody (e.g.: a teacher, the school or the autodidact learner) has to organise the learning. Therefore, we have to develop the organising competences, skills and knowledge to develop the autodidact learners. At the same time, schools will waste their labour on learning (organising) development, if they do not develop the input, process and output competences of the learners.

According to the IPOO-model, we can differentiate three information processing possibilities: the learning may be deficitive, reproductive and productive as determined by the aspects of the relationship of the inputs and outputs.

Deficitive learning: input > output. If the input is more than the output, the learning will be ineffective. For example: a poem has four verses (as input), but the learner can reproduce (as output) less than four verses. The most important characteristic of learning of this kind is information deficit.

Reproductive learning: input = output. If the input is equal to the output, learning will be reproductive without adequate processing. It is often very much. For example: a poem has four verses (as input), and the learner can recite (as output) all of the four verses, but she/he does not understand the words, the verses, the poem, the metaphors of the poem, etc. The learner tries to memorise the lesson word for word, but the learner does not dope the lesson out.

Productive learning: input < output! If the input is less than the output, learning will be meaningful, holistic and creative. For example: a poem has four verses (as input), and the learner (at the moments of output) can recite all of the four verses and she/he understands the poem, and she/he searches the nexus between the new lesson and his/her earlier knowledge. The result is productive, creative learning. This learning is the most important developmental goal together with the learning ideal by the IPOO-model.

The differential diagnostic of reproductive and productive learning can be realized by a confused text (as input). If the oral or written output is exactly the same as the input text, the learning will be reproductive. If the output is not confused, the learning will be productive. The text for the diagnostic of the deficitive learning may be any factual (confused or non-confused) text.

Learning problems can be seen from the aspect of the IPOO-model:

LEARNING = (INPUT + PROCESS + OUTPUT) * ORGANISING
PROBLEM PROBLEM PROBLEM PROBLEM PROBLEM

Some typical problems of the input phase are: 1) 'What will be the topic of the learning?' 2) 'Where can I find information about my learning topic?'; 3) 'How can I use the authorities effectively?' Some process-problems are: 1) 'I don't understand the text, the lesson!'; 2) 'I have to learn too much. I can't memorize everything…'; Output problems are, for example: 1) I hate oral exams; 2) How can I write my dissertation? Finally, let us consider three classical problems of the organising phase: the time, the place and the cost of learning. All of these problems can be revealed by observation, experiment, interview, content analysis, questionnaire and/or test. The general goal of learning development is to improve these phases, and to give effective problem solving methods to the learners.

Working with the IPOO-model

How can we use the IPOO-model in learning diagnostic and development? Figure 3 shows an example. It shows a possible algorithm of the learning of textual information. Above all, we have to teach this algorithm to the learners (Step 0). Steps 1-9 show different actions and competences for productive learning. We can analyse all of the steps of Figure 3 by learning diagnostic.

What can we think about the holistic system of knowledge? On one occasion a student had to take an exam in the 'Fish'-theme in biology and the 'Upthrust'-theme in physics. Both oral exams were successful. The student's knowledge was high-class, wasn't it? Later a teacher asked this student: 'What is the relationship between the functioning of a swim-bladder of a fish and upthrust?' The student's answer was: 'I don't know. Neither biology nor physics book wrote about it.' Is this student's knowledge high-class? Or: what kind of processing level does the student have? If we have a look at the grouping of holistic information processing levels below (Figure 4), we will see that this student did not have 'Level 5'-processing.

Figure 3: The learning strategy of textual information according to the phases of the IPOO-model (Mező and Mező, 2005: 68)

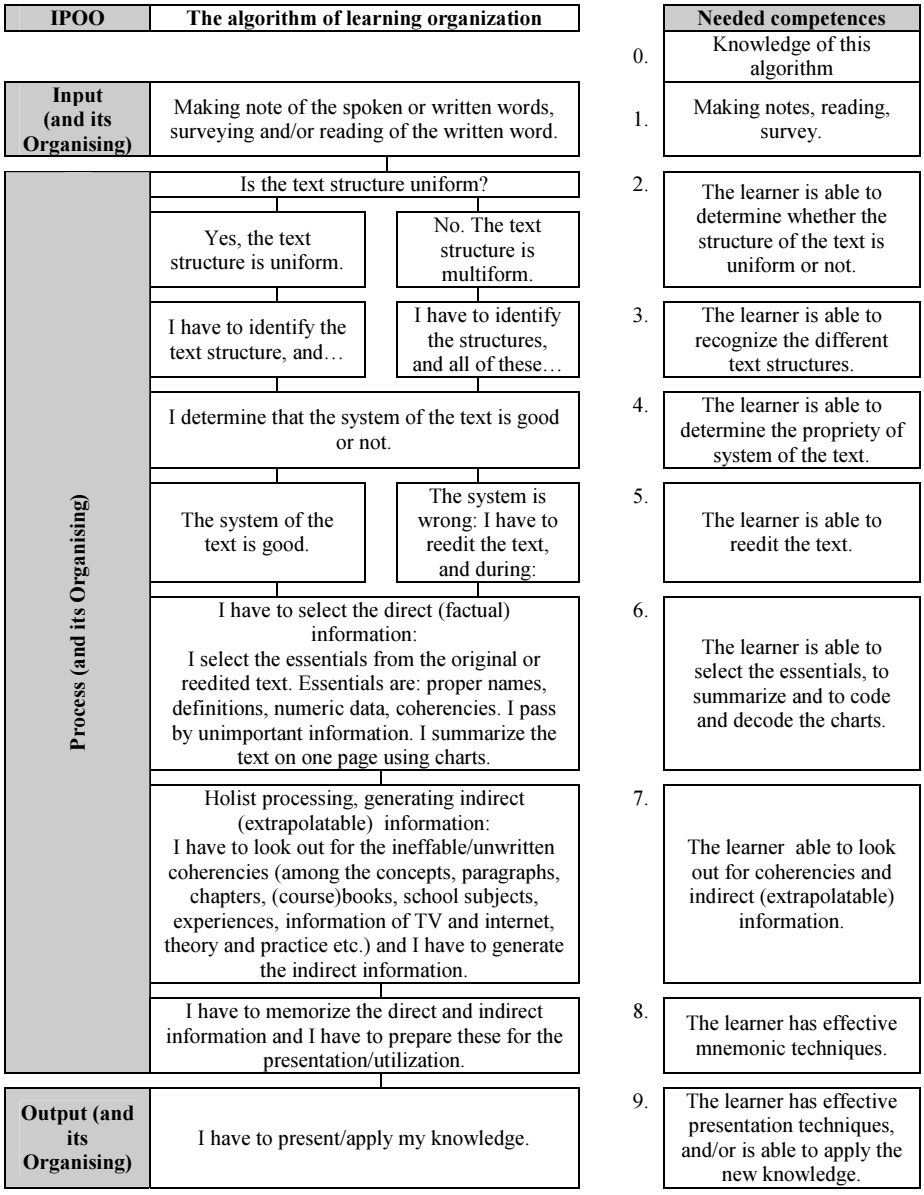
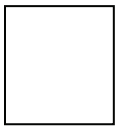
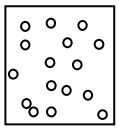


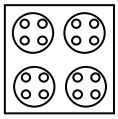
Figure 4: Organising the information from the 'no knowledge' level, across the 'atomic'-level to intersubject holistic information processing (Mező and Mező, 2005: 95)



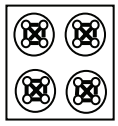
Level 0: no knowledge.
For example: a pupil knows nothing about the 'Fish'.
(The square represents a subject, e.g.: biology)



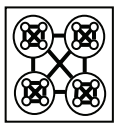
Level 1: *some atomistic information.*
The pupil has segregated information about some theme (e.g. 'Fish'), but s/he can't group the information.
(The little circles represent some information)



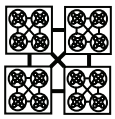
Level 2: simple grouping of information.
At level two the pupil doesn't understand the nexus among the concepts (as little circles) of a chapter (big circles) of a biology coursebook (the square), but s/he has already grouped the information.



Level 3: *holistical processing of two or more different items of information of a chapter of a subject.*
For example: the pupil can find the relationships (represented as lines) between the words of a chapter of a biology coursebook.



Level 4: holistic processing of two or more chapters of a subject.
At this level the pupil can find the relationship between two or more chapters of the biology coursebook (e.g.: chapter on the 'swim-bladder of a fish' and chapter on the 'life of fish).



Level 5: holistic processing of two or more subjects.
For example: at this level the pupil can find the relationship between biology ('swim-bladder of a fish') and physics ('upthrust') and other subjects (the squares represent different subjects).

The role of some metavariables is very serious for successful development. These are: ability of using a particular method, motivation for using the method, knowledge of the method and transfer of using the

method. Possible values and investigations of these metavariables (using a simple three-grade ordinal scale):

Values of the ’Ablitiy of method usage metavariable are:

2 = the learner’s intellectual abilities are sufficient for using the method (it is the learning ideal)

1 = the learner’s intellectual abilities may be sufficient for using the method

0 = the intellectual abilities are insufficient

Investigation: intelligence test, estimation of intelligence, or: if method usage is successful, the learner will have sufficient abilities. In general, only one testing or estimating is enough for all methods.

Values of the ’Motivation for using the method’ metavariable are:

2 = the learner has intrinsic motivation for using the method (it is the learning ideal, because if somebody knows a method, but she/he doesn’t use it automatically, the development will be unsuccessful. The goal is that method usage will be habitual.)

1 = the learner has extrinsic motivation for using the method (the motivation is triggerable)

0 = the learner doesn’t have motivation for using the method (untriggered motivation)

Investigation: if the learner has intrinsic motivation, he/she will use the method without the teacher’s warning (2 point). If the teacher has to warn learners, that he/she use the method, the learner’s motivation will be extrinsic, triggerable (1 point). Otherwise the motivation is zero. We have to measure this metavariable with every method.

Values of the ’Knowledge of the method’ metavariable are:

2 = the learner has practical knowledge of the method (it is the learning ideal)

1 = the learner has only lexical knowledge about the method

0 = the learner doesn’t know the method

Investigation: if the learner uses the method successfully, he/she will have practical knowledge of the method (2 point). If the learner does not use the method, but he/she can speak about the method, he/she will have lexical knowledge about the method (1 point). Otherwise the knowledge is zero. We have to measure this metavariable with every method.

Values of the ’Transfer of using the method’ metavariable:

2 = the learner uses the methods in identical tasks in different subjects in every possible situation

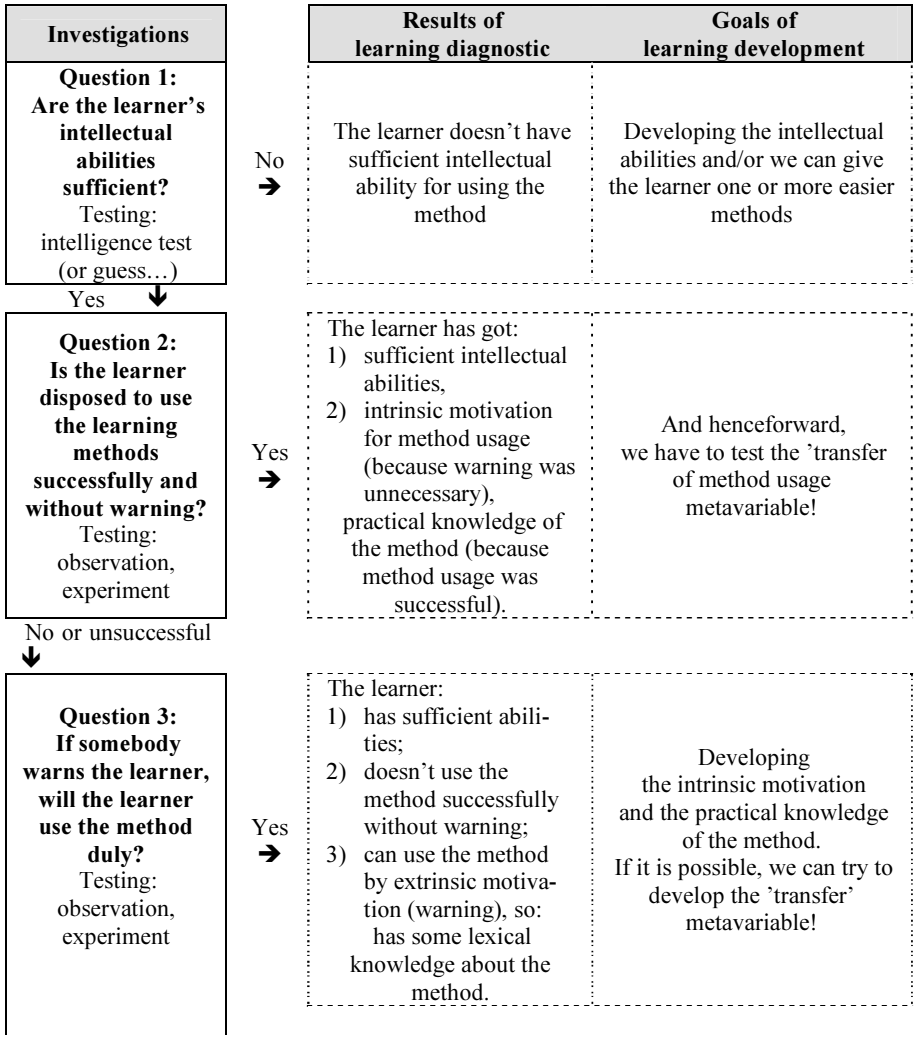
1 = the learner does not use the methods in every possible learning situation

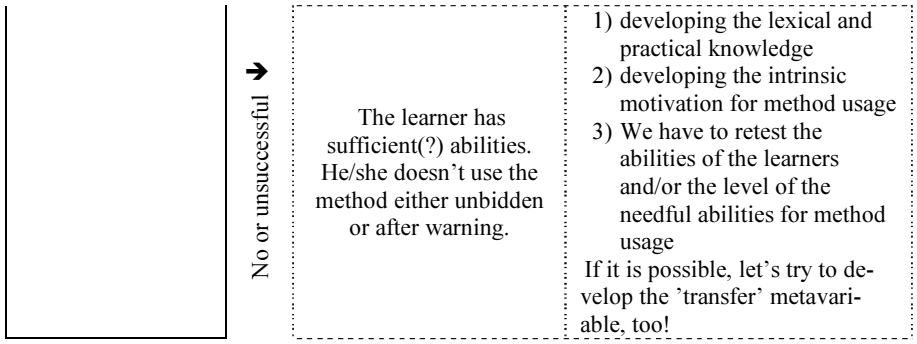
0 = no transfer

Investigation: the diagnostic of the 'transfer of method' can be realized by observation. For example, we can observe using the method in different subjects (mathematics, physics, literature etc.). Or we can analyse the written products of the different subjects of the learners. We have to measure this metavariable with every method.

The Figure 5 shows a practical algorithm of diagnostic of these metavariables.

Figure 5: Investigational questions, possible results, developing goals and simple algorithm of diagnostic of metavariables (Mező and Mező, 2005:)





Plan of the research in the near future

In our days, learning diagnostic is compelled to use questionnaires (principally). Regrettably, the information of the questionnaires could be false, desinformative. Sometimes the validity and reliability and objectivity of these utensils are not very good. It has negative effect to the effectiveness of learning development.

Our possible alternative method would be an objective learning achievement test instead of questionnaires. Though achievement tests are beloved methods in the area of studies of abilities (see: intelligence test), but these are not in use for the research of learning strategies and methods. The application of learning methods and strategies can be measured by tests. The problem is: we do not know any learning achievement test which can measure the variables of the IPOO-model.

In the near future, we will make a new learning test and its handbook. These will be useable in the following areas:

- Learning diagnostic: we will have an objective test, which can identify the problems of learning and show the efficiency of developmental work.
- Learning development: the handbook of the test will suggest developmental possibilities and methods, and it will contain tasks and examples.
- Research: the translated forms of the new test will be useable in national and international comparative research on learning by educational and psychological specialists.
- Education of teachers: diagnostical and developmental application of the test and the knowledge of its variables can be a part of the higher and academic (post)graduated education of teachers. We have already used the IPOO-based learning development for teacher

education at the University of Debrecen, (Debrecen, Hungary) and at Eszterházy Károly College (Eger, Hungary) for a few years.
- School psychology: the test would be a practical utensil of school psychologists.
- Talent identification: this test will be useable for the identification of gifted and talented persons in the learning area.

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RESEARCHES REGARDING UNIVERSITY AND COLLEGE STUDENTS

ISTVAN SZILAGYI

TRANSLATED BY AMALIA SZILAGYI
(UBC UNDERGRADUATE STUDENT – CANADA)

PROFESSIONAL ATTITUDES OF SOCIAL WORK STUDENTS - A CROSS-CULTURAL STUDY

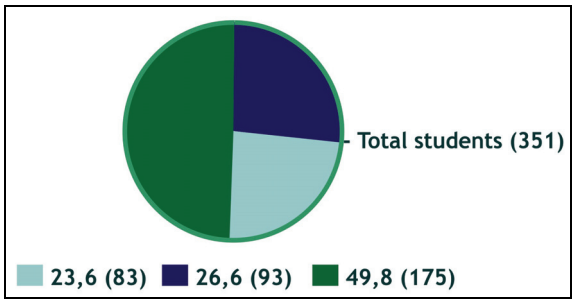
Research Objectives

The main objectives of the research are to compare the professional attitudes of first and last year social work students and, based on these findings, to make comparisons between the three populations (Hungarian, Romanian and Belgian). We find this research important because at the present time there are no established methods to detect changes in attitude that take may place during the four-year instructional period.

Institutional Participants in the Research

The following four institutions participated in the research

	Students 1st Year	4th Year
Institut Superieur de Formation Social, Namur (Belgium)	41	42
Universitatea Babes-Bolyai, Cluj-Napoca (Romania)	41	52
Barczi Gusztav Foiskola, Budapest (Hungary) & Eszterhazy Karoly Foiskola, Eger (Hungary)	88	87
Total number of students	170	181



In comparing the four participants, it is important to note that the Belgian institution has several decades of tradition in social training and education, while the Hungarian institutions have only ten years and the Romanian only eight.

Two Major Parts of the Research

1) Preliminary Research

The objectives of the preliminary research were to create an attitude scale, which was generated through a series of interviews with forty students. All students were asked what they found to be the most important aspect of social work and the scale was established based on their answers. (Note: none of these students participated later on in the principal research). The attitude scale is broken down into thirty items.

In the Principal Research, students were asked to rate each of the thirty items on their importance to the field of work on a scale of 1-5, one representing 'not important' and five representing 'very important'.

2) Principal Research

The aims of the research were to answer the following questions:

- What changes in professional attitude can be identified between first and fourth year students?
- What changes in attitude can be identified in all three groups (Hungarians, Romanian and Belgians)?
- What attitude changes are present only in one specific group?

The results were processed through factor analysis and significant changes were further analyzed.

Results of Research

Similar factors in professional attitude were found between the Hungarian and Romanian groups:

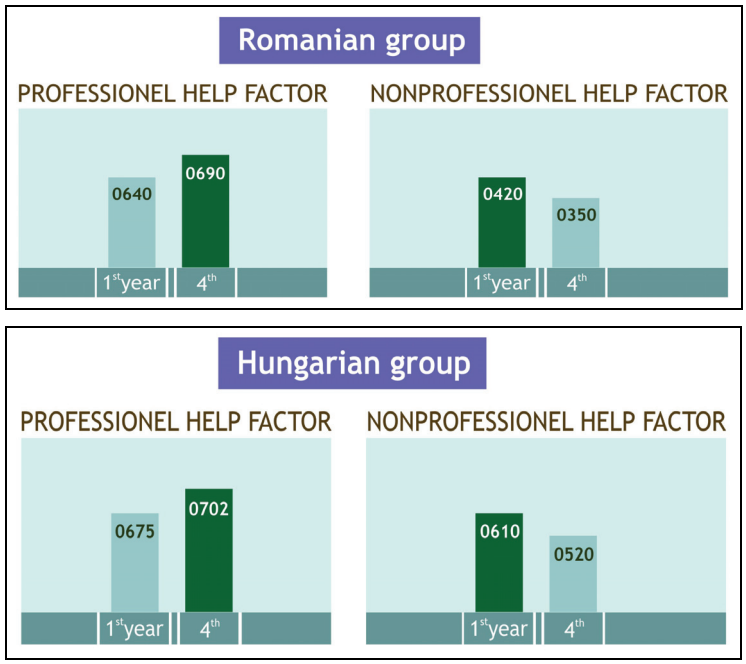
1. Professional Help Factor: This factor includes adequate professional attitudes.
2. Non-Professional Aid Factor: This factor contains attitudes that are subjective and overly emotional.
3. Client Oriented Factor: This factor contains attitudes of acceptance and detailed attention to the client.

4. Autonomous Factor: This factor contains attitudes of independence and definitiveness.

With regards to the first two types of factors, the following change can be found between the first year students and the fourth year students in both the Hungarian and the Romanian groups: the professional help factor increases in intensity and the non-professional aid factor decreases in intensity. The most important attitude changes that increased were:

1. *Hungarian Group* – professional attitudes, for example: understanding professional competence, professional discretion, professional tolerance, etc.
2. *Romanian Group* – professional attitudes, for example: attaining practical experience, genuine communication, confident atmosphere with clients, etc.

The most important attitude changes that decreased were similar in both groups: exaggerated affection towards helping the client, helping close friends and family, helping people with them requesting it or giving you permission to help, etc.



Summing up the changes in the first two factor types, we can conclude that the most important change is that the subjective and irrational professional behavior advances toward objective and rational behavior.

The autonomous factor/attitude (such as independent decision-making, objective behavior, etc.) and the client-oriented factor/attitude (such as unconditional acceptance, attention to client's needs, etc.) increase in both the Hungarian and the Romanian groups.

During the instructional period, the client-oriented factor does not show any major changes. In the Romanian group, the factor increases slightly, and in the Hungarian group it decreases slightly.

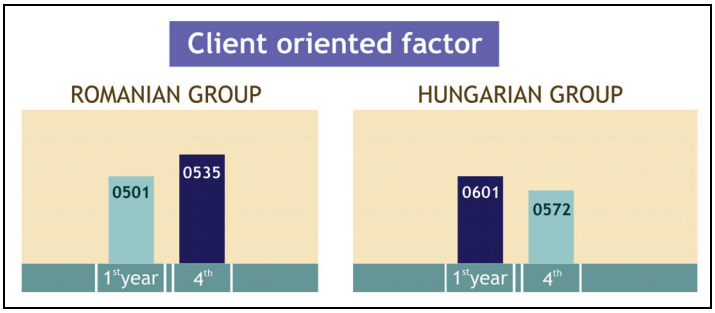
In both groups, the autonomous factor shows the most significant changes. These changes represent the responsibility and decision-making abilities that the groups foster during the four-year instructional period.

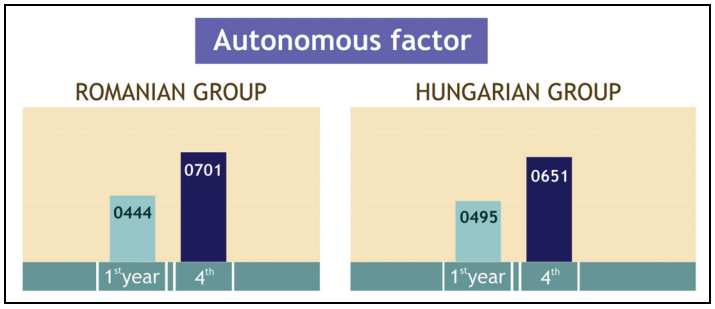
1. In the Belgian group there are four factors:

– Professional Help factor
– Non-professional Aid factor
– Autonomous factor
– Professional Objectivity factor

With the first two factors, largely the same differences can be seen as in the Hungarian and Romanian groups.

The autonomous factor is strong at the beginning of the instructional period and steadily increases in the duration of the instructional period, with greater factor weights than in the other two groups.





The Belgian group contains a strong professional objectivity factor, which is not present in the Hungarian and Romanian groups. The presence of this factor can be explained by two reasons: the traditional learning processes and the important values of Belgian society (for example: equality, justice, etc.)

ISTVÁN PACSUTA

THE STUDY OF VALUE AMONG STUDENTS OF DEBRECEN UNIVERSITY

Introduction

In my short essay I would like to give a short theoretical and conceptual definition of "value", moreover, I present the first steps of a larger survey. I briefly refer to authors who have established the theoretical foundation of value studies, mentioning the surveys belonging to their theories. Regarding the extent of this work, the review offered here is not complete, and it requires further elaboration, just like the data collected by the Regional University Researchers. The present work aims to explain the "choice of values" of students at Debrecen University in different faculties.

The importance of defining value

Studying "value" is an important field of research in our century, not only in philosophy, psychology and in social studies, but in other fields of life, as well. As a consequence of rapid technical and social changes, we can also experience a continuous change of values, and changes in the "scale of values"; a repugnance as well as a crisis of values appears; moreover, there is a general uncertainty concerning values.

The numerous varieties of values in real life, in our everyday economic, political and moral behaviour are one reason that the concept needs to be defined as properly as possible. It seems to be a complicated task, because there is a big gap between the abstract philosophical conception of values and the result of empirical research conducted in the specialised sciences. Similarly, there are big differences among approaches to value research. We just have to think of the works of H. Znanieczki, M. Mead, G.W. Allport or M. Rokeach. We need a common point of view on what we mean by value, and in what ways we can examine the forming and the predominance of social and personal values. In scientific theories, the conception of value appears in two easily separable ways. The first theory says that we choose between the selected or refused object or state; according to the other theory

it is the principle itself by which we choose from objects, people, and phenomena (Szilágyi 2001).

The conceptual definition of value

The concept of value is an abstraction, it cannot be separated from objects, people, or other aspects of life. In the sociological encyclopaedia, the following short definition can be found: "values are general principles, essential orientations, and at the beginning they are collective preferences and the expressions of beliefs" (Bondon-Besnord 1999:52).

According to Ágnes Heller, the "concept of value" is the type of abstraction which appears when the concept of quality emerges; and it distinguishes the desirable from non-desirable, the favourable from non-favourable, the exemplary from fatal, and the evaluation is the common denominator of processes which are about the choice between good and bad.

In the Hungarian literature, the most frequently quoted definition can be read in Váriné Ibolya Szabó's comprehensive work: "Values – as general motives fixating in abstract, cognitive structures – set the importance of a whole range of things, events, situations, and they endow the events and participants of a situation with significance (valency), or deprive these things of their possible significance. In this way they take part in the construction of social reality that is realised as existence"(Váriné 1987:69-70).

We simply can say that there are two basic ways of interpreting values: one says that the individual holds a kind of value (subjective approach), while the other states that a thing holds a value (objective approach).

A further characteristic of values is that they depend on the ideology of a particular culture. That is why values can be considered society- and culture-specific conceptual objectifications.

The accurate definition of value also requires a clarification of the difference between values and customs, attitudes, opinions or taste. Although in these phenomena we can also find the means of "value-creation", it may have other reasons and they do not necessarily mean value orientation (Szilágyi 2001). Several researchers, including Milton Rokeach, pointed at the fact that people have many attitudes, opinions, but their self-identity is expressed by identification with only a few central values. The more central a value is for an individual or a group, the more likely they are to identify with the value concerned.

Concerning the organisation of values, we need to mention two related elements: the normative function and action-centeredness. The normative function shows the co-ordination of social fitting-in and conformity; action-

centeredness signifies how values as notional objectifications influence and control human action.

The sociological concept of value

Scientific sociology has used the concept of value in a sense closest to philosophy. Max Weber (Weber 1998) introduced the "concept of value" into sociology. His requirement that science should be free of values and that fact-finding must be separated from evaluation can be considered the foundation-stone of sociological attitude.

According to Weber, value is non-recurring and lawless, an importance projected by people arbitrarily or irrationally. It determines our actions, but it cannot be deduced from our actions, therefore sociology has to deal with the subjective conditions of the doer; and it has to know the purpose-images and value-images related to actions. To examine this, Weber introduced the concepts of purpose-rational and value-rational action. Durkheim also mentions value with a philosophical bias, primarily concerning moral awareness. To Talcott Parsons this is the category of conscience collective, a system of convictions, so the system of values. Value appears as the synonym of moral standard. Value, as Durkheim sees it, is not only of purpose in nature, but at the same time it is a product of nature, and it can be considered a social objectification (Parsons-Skils 1951).

There is another well-known and often used philosophical, linear value-typological model, worked out by C. Kluckhohn, which separates three different groups in the world of values. In the first group, we can find values concerning the relationship between man and nature; the second group contains the relationship between man and man, and the third group contains together man-nature and man-man relationships. The value-typology established by C. Kluckhohn has been applied in intercultural research (Váriné 1987).

C. Kluckhohn's concept of value: "Value is the concept of the desirable explicit or implicit, which is distinctive to the individual or it is characteristic of the group, and influences how we choose the ways, means and aims of actions" (Váriné 1987).

He emphasizes three dimensions of values:
a, the dimension of modality: whether the value is attractive or repulsing
b, the dimension of meaning: used for representing quality
c, the dimension of intention: means the preferred way of behaviour

Talcott Parsons regarded values as established role-expectations, so values are behaviour patterns and rules that are formed together.

His value-oriented typifying scheme prevails in the following dichotomies:

- driven by emotions—emotionally neutral
- self-oriented—community-oriented
- universal—particular
- compulsory (rule or norm)—achievement-like

He thinks that this can be applied to give a static, descriptive characterisation of any culture. Moreover, he wants to meet the requirement that by his value dimensions in every culture there is a base-person who belongs to that culture and holds the essence of that particular culture (Parsons-Skils 1951).

The results of the research

In this study I discuss the data we got by a questionnaire survey, which was conducted by the Regional Research Group of the Institute of Education at Debrecen University. The survey was carried out among students of Debrecen University. This is just a small part of a larger work to be completed in future, which uses the entire database of the research group.

Total number N=394, women: 260, men: 132, all of them students at Debrecen University

The combination of faculties is as follows:

Table 1 *Faculty * gender of questioned*

	boy	girl	
agricultural	16	43	59
arts	23	69	93
sciences	67	75	142
economics	14	17	31
medical	8	36	45
law	4	20	24

Minimum age 21, maximum age 35, average 23.5; standard deviance: 1.77. 95% of sample are 21-26 years old. Most students are 24 years old, which amounts to 36.5%.

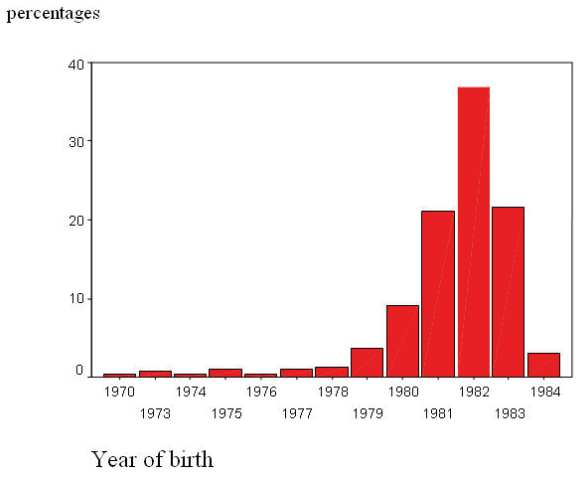


Figure 1 *Year of birth of the students in the sample*

This diagram contains the educational level of parents

Table 2*. Faculty * educational level of father*

	Primary or less	Trade school. vocational	Technical school	Secondary grammar school	college	university
agricultural	6.8%	22.0%	35.6%	5.1%	18.6%	11.9%
arts	1.1%	22.8%	30.4%	16.3%	14.1%	15.2%
sciences		27.6%	26.9%	4.5%	17.2%	23.9%
economics	3.4%	24.1%	24.1%	10.3%	13.8%	24.1%
medical		17.1%	19.5%	14.6%	12.2%	36.6%
Faculty of law		4.3%	34.8%		30.4%	30.4%

These percentages are row-percentages, so we have to take the total data of faculties as 100%. It can be seen in the table that at the Faculty of Law the educational level of the father is usually the highest, in the second place we can find the Medical Faculty, in the last place we can find the Agricultural faculty

Table 3 *The statistical index of the educational level of the father and the mother*

(1-maximum primary school, 2-vocational or trade school, 3-technical school, 4-secondary grammar, 5-college, 6-university)

	Father			Mother		
	Median	Modus	Standard deviation	Median	Modus	Standard deviation
agricultural	3	3	1.49	4	5	1.33
arts	3	3	1.4	4	5	1.3
sciences	3	2	1.58	4	5	1.39
economics	3	3	1.63	5	5	1.58
medical	4	6	1.56	4	4	1.37
law	5	3	1.38	5	5	1.24

It is interesting that if we take the education of the mother into consideration, we cannot find such big differences. At least in statistical middle values, there are no such strongly marked differences as if we regarded the educational level of the father alone.

It can be very informative if we take educational level as a numerical variable because theoretically there is intensity in it—for example, there are more university qualifications than secondary qualifications. However, as the differences between items cannot be expressed with numbers, theoretically we cannot have an average with these variables. If we still try it, we will get the following result: if we grade the educational levels of the father and the mother separately, we will have the following order:

Education of father: agricultural< arts < economics< science <medical <law

Education of mother: economics <science <arts <agricultural< medical <law,

Together (average): agricultural -3.75 < arts -3.84 < economics -3.88< science -3.91< medical -4.33 < law -4.52

So the parents of both the faculty of law and the faculty of medicine have higher education in all three cases.

Analysis of variables

I transposed the scale of 4 into a scale of 100, so it is easier to represent.

The original and the transposed results are as follows:

1-not important at all=> 0

2-rather not important=> 33.3

3-rather important=> 66.6

4-very important=> 100

Then I averaged and then I put the results into order according to the results of the total sample.

Table 4 *Order of different values*

In brackets, we can find the number of each item on the list (e.g. item 15 was love and happiness, those who gave answer put this into the first place):

	Average in sample	agricul-tural	arts	science	Econo-mics	medical	law
1. love/happiness (i15)	**96**	97	96	96	97	96	91
2. safety of the family (i12)	**94**	96	94	93	97	95	91
3. true friendship (i14)	**92**	97	92	91	91	90	87
4. inner harmony (i1)	**90**	90	89	90	88	95	91
5. peaceful world (i9)	**86**	97	86	86	83	90	84
6. freedom (i3)	**83**	85	84	84	80	82	75
7. interesting life, experiences (i5)	**82**	84	84	79	81	84	80
8. varied life (i13)	**76**	78	79	75	71	73	72
9. originality, imagination (i8)	**76**	72	80	78	62	73	72
10. social order/stability (i4)	**72**	76	75	67	73	76	71
11. material goods (i6)	**69**	78	67	66	74	70	71
12. keeping customs/traditions (i10)	**69**	76	72	65	59	70	68
13. protection of your country/ keeping the nation (i7)	**57**	64	62	55	49	55	56
14. religious belief (i11)	**46**	50	48	43	34	50	56
15. power/control over others (i2)	**23**	28	27	18	24	24	26

Table 5 *Differences in order, also according to faculties*

Order in total sample	No. of item	agricul-tural	arts	science	economics	medical	law
1.	15	15	15	15	15	15	15
2.	12	14	12	12	12	1	12
3.	14	12	14	14	14	12	1
4.	1	1	1	1	1	14	14
5.	9	9	9	9	9	9	9
6.	3	3	3	3	5	5	5
7.	5	5	5	5	3	3	3
8.	13	13	8	8	6	4	13
9.	8	6	13	13	4	8	8
10.	4	10	4	4	13	13	4
11.	6	4	10	6	8	6	5
12.	10	8	6	10	10	10	6
13.	7	7	7	7	7	7	7
14.	11	11	11	11	11	11	11
15.	2	2	2	2	2	2	2

So love and happiness (item 15), peaceful world (item 9), protecting and keeping your country and nation (item 7), religious belief (item 11), power and control over others (item 2) are in the same place in all faculties, in other items there is a slight difference. The largest disagreement can be found in the question of freedom (item 6) and originality, imagination (item 8).

Students ranked these values from 1 to 10, according to how important they are for them. The ranking is as follows, according to average results.

Table 6 *How important are the following things?*

	average	Medián	Standard deviation
1. family	9,49	10	1,26
2. your plans for the future come true	9,04	10	1,30
3. friends	8,50	9	1,61
4. if you are educated	8,38	9	1,76
5. your job/studies	8,37	8	1,39
6. the kind of job you do	8,27	8	1,48
7. free time/entertainment	7,95	8	1,75
8. how important you feel in society	7,42	8	2,23
9. being Hungarian	7,32	8	2,55
10. money	7,29	8	1,92

11. culture/learnedness	6,94	7	2,03
12. how much your parents earn	6,68	7	2,24
13. religion/belief	5,04	5	3,25
14. politics, public life	4,12	4	2,33

The most important things for them are family, future plans come true, and friends.

It is a remarkable result that they turn away from politics and public life (4.12 average). Religion had a low average (5.04), so it has a low importance among students asked.

It also turns out that for most students free time is more important than money.

In other parts of the analysis, since we have more than two independent variables, I applied one-way anova. Then I compared them by pairs to find the significant differences at each faculty.

Table 8 *The investigation of significance between faculties*

How important are the following things?	Faculty	Sig.
your job/studies	agricultural - economics	0.028
	economics - medical	0.001
friends	agricultural - science	0.032
politics, public life	agricultural - science	0.021
	arts - science	0.000
culture/learnedness	agricultural - economics	0.033
	arts - science	0.030
	arts - economics	0.000
	economics - medical	0.002
	law - medical	0.014
money	agricultural - science	0.008
	agricultural - arts	0.000
the kind of job you do	agricultural - science	0.001
	agricultural - economics	0.013
	science - medical	0.009
	economics - medical	0.035
being Hungarian	agricultural - arts	0.015
	agricultural - science	0.000
how much your parents earn	agricultural - economics	0.031
	agricultural - science	0.001

if you are educated	agricultural - science	0.013
	agricultural - economics	0.019
how important you feel in society	agricultural - economics	0.029
	science - medical	0.036
	economics - medical	0.006
your plans for the future come true	agricultural - science	0.002
	agricultural - economics	0.003

From this chart, I would like to take out only a few significant results. It is interesting that general stereotypes cannot be proved, so the students of medical and law faculties are not more materialistic (these are well-paid jobs), consequently there is no significant statistical difference. For the students at the agricultural faculty, work and studies are significantly more important than for the students of economy. In this sense, the devotion of medical students is the biggest.

The results in the chart above and the differences between the faculties can be explained statistically, but in fact the differences are small. Consequently, I think that the variable that students go to various faculties, does not give an explanation to the different choices or proves only a small part of it. We can notice that there is no big difference in general values, so in the future other variables should be involved.

I would like to take out some interesting facts. According to the expectations, being important in society is very important at the Medical Faculty. Religion is not important at the faculty of Economics but students at the Medical Faculty were the most religious. These faculties do not provide any explanatory force. There is no big difference in general values, later other explanatory variables should be involved.

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DOLLI BUDAHAZY-MESTER

EXAMINING PSYCHOLOGICAL COPING OF COLLEGE STUDENTS: HOW CAN WE STRENGTHEN THE EFFICIENCY OF INDIVIDUAL COPING?

We have examined college students' personality characteristics that determine psychological immune competences, to reveal which characteristics show relationships with learning and achievement motivation, scholastic records, and their attitude towards work at the college. The study was conducted at a teacher training college in Eger, Hungary.

The psychological immune system is a sum of personality features that enable the individual to cognitively evaluate a stressful situation, choose an adequate coping strategy, search for and use possible sources. Individual coping potential dimensions may influence motivations, problem solving abilities, self-efficiency, etc., moreover, they may affect information processing and integration.

We administered the Psychological Immune System Questionnaire (Oláh, 1999) to measure personality characteristics that determine psychological immune competences.

The results of the study will be integrated in teacher education and learning efficiency trainings.

Psychological Immune System

The term "psychological immune system" represents a set of measurable personality traits that enable the individual to cognitively evaluate of stressful situations, select and use appropriate coping strategies and effective coping, so that the integrity, effective functioning and the developing potential of the individual are damaged (Oláh, 1999).

Subsystems of the Psychological Immune System

The Approach - Belief Subsystem measures the extent to which a person trusts the environment and his or her ability to make a difference in it. It is composed of the following dimensions:

– Positive Thinking
– Sense of Control
– Sense of Coherence
– Sense of Self-Growth

Monitoring - Creating - Executing Subsystem refers to the ability to operate effectively in the environment. It consists of:
– Change and Challenge Orientation
– Social Monitoring Capacity
– Creative Self-Concept
– Social Mobilizing Capacity
– Self- Efficacy
– Goal Orientation
– Problem Solving Capacity
– Social Creating Capacity

The Self-Regulating Subsystem refers to the ability to change adaptively as required.

Its dimensions are:
– Synchronicity (the ability to keep step with environmental changes, to pulse in sync with the present events in an open and flexible manner)
– Impulse Control
– Emotional Control
– Irritability Control

The three interacting systems optimize a person's action in the world.

Achievement motivation

Success-oriented

– Tasks evoke positive emotions.
– They are more persistent.
– Strong ambition for success
– Lower level of social motives
– Accomplishment of tasks is important.
– Feeling of competence
– Failure, because of lack of effort

Failure-avoiding

- Anxious, nervous.
- They are not aware of their possibilities.
- They do not trust their strength and abilities.
- Feeling of incompetence
- Negative emotions
- Concerned with avoiding failure.
- Steps out of task-situations, or rejects the task or gets scared.

Demand-level

Sum of demands, which apply to future achievement .The concept first appears in Levin's work in connection with achievement motivation, which is not a uniform motive itself, but a complicated network of a number of motives.

Influencing factors:

- Wanting to achieve (for the pure sake of achievement).
- Social success, appreciation
- Fear of failure and depreciation
- Level of anxiety
- Protection of self-image
- Need for security
- Sense of reality
- Importance of achievement, experience

Aims of our study

1. What kinds of psychological coping methods do success-oriented and failure-avoiding people use?
2. Which subsystem of PIS correlates most with the dimension of success-orientation, and failure-avoidance?
3. Are there significant gender differences considering the use of PIS dimensions?
4. What is the correlation between exam-anxiety, social well-being and PIS dimensions?

Methods

1. We administered the Psychological Immune System Questionnaire (Olah,1999) to 177 College students in Eger, Hungary, to measure the personality traits that determine psychological immune competence.
2. Demand-level test: indicators of the demand level test:
   - *Intention-difference*: difference between achievement and the next pledge
   - *First pledge*: the value the subject estimates at a guess, without achievement, after trying one screw (usually between 10-15)
   - *Mean of achievement*: we calculate the mean of 5 achievements.
   - *Difference between first and last achievement*
   - *Changes of demand-level*: success usually increases, failure decreases intended achievement.
3. Questionnaire about studying at the college by Maria David to measure exam-anxiety and social well-being.

Considering the above-mentioned factors, we defined 3 groups in the beginning:

1. Ambitious group: the first pledge is within the real value zone, but at the upper edge (15), the intention-difference is high (+4, +5), the mean achievement (13-14 or higher) and achievement-increase is the highest (3-4) in this group.
2. Unambitious group: the first pledge is low but real (10), the intention-difference is low -2, +2), the mean achievement is low, which means avoiding frustration and expecting easier success, the subject does not insist on achieving what was once not achieved in case of failure.
3. Unreal group: the first pledge is either over 20 or below 5, the intention-difference is very high or very low (10!), they insist on keeping the intention never approached, achievement does not increase.

Results

In our study, we did not find any significant differences between the unambitious and the unreal groups regarding the PIS scales, and therefore we united these two groups and named them failure-avoiders.

Comparing the scores of success-oriented and failure-avoiding groups, we found significant ($p<0.05$) differences regarding positive thinking, creative self-concept, sense of self-growth, sense of coherence, synchronicity, and impulse control. That is, success-oriented people:

- are more optimistic (this scale always goes together with success-orientation),
- are able to see task-situations as a challenge, they believe that things are going in a rational, expectable way; they face the conflicts, rather than run away from them, try to see the essence of difficulties.
- They are proud of their achievements, they see their success as development.
- They are able to concentrate on the task, they have control over their attention and mind.
- By analysing the situation, they choose the most appropriate behaviour. They work with a rational program, they are able to maintain rational control.

Success-oriented and failure-avoiding people differ ($p < 0.05$)from each other considering the Monitoring-Approaching subsystem as well. It means that success-oriented people have a higher ability for understanding their physical and social environment, and have a better control over it. They are more optimistic, have a better sense of coherence and control (they believe things happen up to them, they make an effort to get and keep control over events), they seek challenge.

Comparing grade point averages, success-oriented people had higher achievement again, it was 3.84 for success-oriented, and 3.55 for failure-avoiding people.

We did not find any significant differences between the two groups considering general well-being and feelings in exam-situations.

Gender differences

Comparing the groups of male and female subjects, we found significant differences (sign<0.05) regarding creative self-concept, self-efficacy and goal orientation. Males have higher self-confidence, they are prouder of their achievements, and are more convinced that they are able to achieve their goals and cope with problems, and their frustration tolerance is higher.

Considering the subsystems, we found significant differences regarding the creating-executing subsystem. That is to say, males are more effective in choosing the appropriate coping methods for the increasing challenges, achieving their goals through changing their physical, social environment or even themselves. They are inventive, creative, good problem- solvers, they have high self-confidence, and can convince other people, so they have good social skills to get partners if themselves are not enough to reach their goals.

Well-being, feelings in exam-situations

We wanted to know how anxious our subjects are in exam-situations, what the effect of the exam-situation on them is, what they think about the teachers' attitude, behaviour, and whether the atmosphere of exams helps or inhibits their achievement.

The results show that exam anxiety correlates with scales of sense of control, creative self-concept, sense of self-growth, self-efficacy, problem-solving. That means if someone is inner-controlled and thinks that the outcome of the situation depends on him, if he has a high self-confidence, and is able to work out alternative solutions and help his own coping with restructuring his given experience, and trusts that he is able to cope with the problems, then he does not feel anxious in exam-situations.

As to well-being, we wanted to know, whether our subjects feel that they can get all the information they need in order to be successful in their studies, whether they feel lonely and who think loneliness is up to themselves or the environment. Our results show that the variable of well-being correlates to the scales of positive thinking, sense of control, sense of coherence, self-concept, social mobilization, social creating capacity, sense of synchronicity. That is, an inner control attitude, positive thinking, facing challenges, trying to solve conflicts, self-confidence, high self-reliance, involving partners in coping if needed, and good social skills can contribute to well-being. We should emphasize, though, that most of these scales refer to the activity of the person („things are up to me, and if I'm not sufficient, I should seek help, resources in my physical and social environment").

And a result, that is not surprising: grade point average shows correlations to sense of synchronicity and goal orientation. This means the more one can concentrate one's attention on the task one is working on, the more one can go on with one's work despite obstacles, or the more one can play down one's personal needs if needed, the more one can achieve.

EXPERIENCES OF HIGHER EDUCATION

RITA SZEBENI

SELF-KNOWLEDGE AND PROFESSIONAL IDENTITY

The paper discusses the role of self-knowledge in career socialization and presents a constructivist approach to its development, explicitly rejecting what are known as the profession model and the science and technology model in favor of a critical-interpretive approach, on which individuals are viewed as active organizers and interpreters of their own knowledge. These capacities enable them to construct and deal, within their framework, with their own internal world. The paper argues that role construction is part of a highly individual process in which everyone constructs their own understanding of the world they live in. Since conceptual change and cognitive changes are an integral part of this process, the principal goal of integrating the development of students' self-knowledge in the higher-education process is precisely to bring about conceptual change. Research is oriented toward a development program that can be integrated in social and teacher education.

Keywords: self-knowledge, career socialization, constructivism, the construction, definition and interpretation of roles, conceptual change, professional identity, teacher education.

Publications reporting work on students' self-knowledge in higher education institutions in Hungary are available in the psychological as well as the pedagogical literature. Our contribution to the field is the description of a new model in the present work, in which students of education and students of social psychology were involved.

Theoretical Considerations

The understanding of expectations relating to the work, role, education, and personality of teachers (and helpers) is intimately tied to various existing pedagogical paradigms. These paradigms will mainly differ from one another in terms of the answers they give to the following questions: Education is done on the basis of what general conceptualization of a human being or personality? What is education itself? What is understood by

educability? What should teacher education be based on? How is the concept of knowledge understood? How are pedagogic roles interpreted? etc. Different teacher education models offer different answers to these questions.

In our work, we explicitly reject what are known as the profession model and the science and technology model, because we find it hard to identify with its underlying anthropological conviction which adopts an interpretation of learner roles that assigns a passive role to learners, rejecting their activity and autonomy. We consider a critical-interpretive model superior, which assumes a conceptualization of a human being on which an individual is viewed as an active organizer and interpreter of their own knowledge, who can deal with their autonomous world within their own interpretive framework. This conceptualization of a human being is consistent with general constructivist assumptions about human personality, knowledge, and learning.

The constructivist approach we prefer to assume is more in line with Habermas's critique of Parsons's structure-functionalist theory of roles. In Parsons's view (quoted in Kron 2003), the congruence of role expectations and the individual's position as defined by their needs are a precondition for their social integration. This assumes externally controlled individuals. Habermas (1971, quoted in Kron 2003) attributes more differentiated functions to the carriers of roles (individuals). He recognizes internal control, since – as he puts it – definitions of roles are not to be assumed as given either by the system or by the acting individual and, in addition, the equivalence between role definitions and role interpretations is rare in reality – in fact, they are more often different rather than identical. This is what he calls the discrepancy theorem, which may be used to determine the extent of the difference. Individuals produce self-accomplishments that interact with each other, which leads to multiple role interpretations. In other words, roles are constantly redefined. Role definition, therefore, is a constructive process that takes external experience into account, but the individual's behavior and actions are internally controlled. An educational program may assist students in professional role acquisition by providing an appropriate learning environment in which students can construct their professional roles for themselves.

The dominance of the cognitive approach was to be perceived in several related sciences in the middle of the twentieth century. A new paradigm has emerged, which is represented, among others, by Karl Popper, Thomas Kuhn, and Noam Chomsky (cf. Popper 1997, Kuhn 1984, Chomsky 1995). The constructivist approach to cognition is opposed to the view that knowledge is the product of some process of reflection.

Constructivism does not seek any match between knowledge and reality, because it does not believe that knowledge may be evaluated as either true or false. As Nahalka (1997) puts it, "according to constructivism, knowledge is the result of construction, whereby a human being constructs for themselves an internal world which organizes, integrates, and interprets their experience. This internal world enables the individual to make specific predictions about future states of affairs in the real world. A very important function of this internal model of the world is to process, interpret, and systematically integrate the information the cognizing individual encounters. This is exactly what we call learning."

Pléh (1999) expresses a similar view, stating that "not only science is understood as a model construction activity, but human cognition in general has been assumed for the past thirty or forty years in several sciences, such as psychology, ethology, linguistics, and computer science, to be a kind of model construction work, which is the central defining feature of human beings."

A lot remains to be understood about models as representations of knowledge and the process of model construction. Yet, the important point for us is that constructivism interprets emotions, human relations, information intake and processing within a framework of model construction.

Our goal in doing work on students' self-knowledge is to bring about conceptual changes. Conceptual change is understood to be a change of elements that constitute the structure of an information processing system. The purpose of developing students' self-knowledge is to differentiate their understanding of their own personality.

In addition to the analytic specification of basic principles and concepts, we employed the technique of cross-mapping of knowledge domains in order to achieve conceptual change. Thus, a characteristic feature of this approach is the special source of information, personality itself, and the role it plays in processing information. We adopt the general assumption that certain domain specific information processing structures are innate and that these are the foundation on which successive development is based (Nahalka 1997). New information is integrated into these structures through conceptual changes. We also adopt the assumptions that prior structures and their essential traits coexist with modified structures, and that individuals naturally resist these changes.

Research is oriented toward a development program that can be integrated in social and teacher education.

The Program

Inasmuch as group work throughout the program was based on data from the participants' own life histories, it was similar to standard self-knowledge or personality development programs. However, our program was admittedly different in important ways from traditional approaches. Analysis was always crucially determined by (our understanding of) the central elements of the profession.

Knowledge acquired in the sessions always identifies a particular domain in the range of activities defined by the profession chosen by the students. The stories that participants tell about themselves are important for the continuity, unity, integration, and identity of their selves.

It is made explicit that an important purpose of the sessions is to develop students' professional identity, by sharing stories with group members. Meetings were organized on a regular basis, in order to reduce the likelihood of relapse.

Our original intention was to relax group boundaries and allow a closed group structure to open up, in order to replace the artificial world of a closed group by a sort of group life that is more like the real world. This was motivated by considering that, because life in organizations is variable, students would need to be able to develop their own strategies of how to adapt to new community members, colleagues and leaders in schools as well as social work. However, the structural and operational constraints of the higher education institutional context (scheduling, shortage of classrooms, etc.) interfered, and, as a result, the groups remained closed.

Group Work Methods

The first step we took was to adapt Rational Emotional Therapy to the goals and needs of our program. The therapeutic process, originally worked out by Waters (1982), based on work by Ellis, was adapted to young people with normal life patterns, though undergoing field change. This is an active, direct approach that focuses on converting adaptationally unproductive thoughts, emotions, and behaviors to productive ones. It makes specific assumptions about emotional disturbances and the nature of health. It assumes that emotions are not directly caused by real-world situations but by people's perceptions and interpretations of those situations. Thus, since people create their own emotions, they should be able to learn ways to control them, rather than the other way round.

The central theme of group sessions is to facilitate cognitive changes. This presupposes students learning to be able to listen to their inner talk and

come to understand what they know about themselves and about the processes that occur in them. For a detailed analysis and presentation of the process, see Szebeni (2004).

What emerges in this first phase is a texture of life histories, situations, emotions, and beliefs, which serves as the foundation for work that follows in the next phase. The emotional process of detachment from the parents, principles of professional role preferences, and various ways of resolving social conflicts are clarified. What happens here is a kind of "figure transformation", a sort of closure, where instances of incompleteness are replaced by a sense of completeness. Group members' irrational beliefs become real, since they are legitimized by members re-experiencing them. This explains why there is no need to employ what are called reality tests in this kind of work. What might be explored, however, is the question of how various constructs support its viability. It is not explicitly communicated in the general theory, i.e. constructivism, what sorts of input guarantee major changes in cognitive structures. We hypothesize that the substance of participants' life histories and the concomitant inner stimuli contribute to an elaboration of their mental structures.

The second major phase of work in the group was the exploration of values (Szilágyi 1997). This brings to the surface value-related cognitive contents. Patterns of value organization are made explicit, allowing the group leader to identify areas where members experience problems in the world and segments of reality where they possess little self-knowledge. In such cases the group leader adjusted the stories to the group.

Our experience suggests that early on in the process, students tend to be more active and more sensitive to decision-making situations that arise in partnership relations and in the family, and are less involved in professional issues. This was evidenced by various student behaviors: they either played a situation down, or closed too soon, or simply did not perceive a highlighted situation as a challenge to make a decision.

Summary

What we have described is a possible way of preparing students for the teaching profession, which, we feel we have reason to believe, ensures better professional development and more successful professional self-accomplishment. The continuous elaboration of experiences through work on various life histories triggers changes in the personality of children and young people that yield more conscious self-definitions, as the substance as well as the target of these changes is the personality itself. Participants in the

program develop an ability to reconcile with conflicting socialization systems, which is a highly positive mental hygienic asset.

By anticipating profession-specific situations in role-oriented activities in group work designed to enhance students' perception of role repertoires, it is ensured that students are given ample opportunity for practice and development in professional areas for which they are being prepared. Thus, they may evaluate their abilities against the challenges and expectations of the chosen profession. Therefore, it is more likely that the participants' reactions in pedagogically challenging situations will be fundamentally determined in quality by what they have learned during group sessions rather than by the activation of old school memories and experiences.

The program is recommended to anyone seriously interested in enhancing their repertoire of procedures and techniques in preparing students for the teaching profession. Although we claim no exclusiveness for our approach in teacher education, it is not difficult to see the results that the program has achieved. The program makes no specific professional demands on people who wish to employ it. Anyone working in teacher education may successfully apply it, without very specific professional prerequisites or particular competences, provided they are ready to adopt its basic principles and have acquired the program's methodology.

The training of trainers offers good opportunity not only to study and master the methodology of the program but also for the trainers to clarify their ideal concept of an educator, the objectives of the program, as well as the organizational principles of the system in which it may be tried out. Some knowledge of group dynamics is essential, but this is believed to be less of an issue than in conventional personality development groups.

Our work offers no evidence on the issue of whether or not a conscious development of specific knowledge domains is more successful in sensitive states or at a particular age. Constructivist considerations suggest that the answer to the latter of these issues is likely to be negative. It also remains to be shown what particular sorts of input trigger conceptual change in a person's understanding of their own personality, which was only indirectly shown to have occurred. Resistance to conceptual change is also a matter for future research to explore. Statistical evidence is likewise not available concerning the manner the program affects career fulfillment.

It is hoped that academic professionals who are currently working in teacher education institutions and are involved in preparing students for the teaching profession may make good use of the program.

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JÓZSEF HADNAGY

GROUP-WORK IN THE EDUCATION OF SOCIAL EDUCATORS

1. The topic of research

Social education has developed three major working forms. In individual case management the educator helps the client in a face to face meeting, while group work and community work involve more participants in such a manner that the interaction of group members becomes meaningful.

Our experience is that group-work is applied only by a few people, and in its limited applications it is often not applied efficiently in the profession.

The supporting profession seems to require a more wide-spread application of pedagogical group-work, since with the spreading of this work form specialists may take advantage of potentials offered by this form of work and increase the effectiveness of their work, as well as the repertory of their professional roles. Given the scarcity and sporadic nature of technical literature on the subject, specialists who already employ pedagogical group-work may also find the expected results of this research useful in their work.

2. The assumptions of the research

- Preparation for group-work assumes a different perspective and a non-conservative notion of quality in the education of social educators.
- Our understanding of group work is still immature, given that group-work in actual practice does not have anything like a long tradition in pedagogy.

3. The programme of research

To work out the model that may resolve inadequacies indicated in the section on research assumptions. This inevitably involves the researcher's participation in training and development programs targeted at working out and trying out effective group-work strategies and methods as well as

participation in the professional practice of group-work, performed in the field.

4. The methods of research

Questionnaire

– questionnaire of condition with instructors and students,
– questionnaire of claim with those who work on a field

Interview

– individual and collective interviews with senior instructors
– individual and collective interviews with students

Monitoring

– monitoring of group-work preparation sessions and projects on educational settings

5. Expected results of research

– A genuinely effective model of group-work that is transferable to practice in the field may be employed by social educators.
– Expansion, enrichment and sophistication of the social educator's repertory of roles.

6. Clarification of key ideas

a) Who is a social educator?

The education of social educators and the need for a new system of skills and expert competence arose essentially out of an understanding of the radical changes that significantly altered the life and working of schools following the political transformation in this country. Unemployment, homelessness, the loss of and changes in jobs and work places took many families by surprise and unprepared. Therefore many families cannot cope with the trauma and the serious challenges all those changes present.

Undoubtedly, the social stress does not leave children unaffected, either. The consequences of children being brought up in stressful families are easily noticed in the schools. Conventional principles, approaches and methods employed in teacher education cannot prepare students to meet and cater for the needs of children requiring protection in schools, nor can a

conventional approach empower students to perform effective preventive work in order to decrease the negative effects of social changes or to offer professional help and encouragement to specially disadvantaged or endangered students to help them do better at school and complete school more successfully.

The social educator is a specialist whose pedagogical tool kit not only enables them to mitigate children's social, learning and socialization problems, but also to have some effect on the system, the context in which children exist and function, in conjunction with the participation of social institutions and services. Social educators need to be able to accomplish these goals through individual, collective and community work forms.

b) What do we mean by group-work?

In the case the social educator specialist, group is not merely one of the several possible organizational forms of teaching, but it is a specific, problem oriented and professionally controlled educational setting and approach. The specialist as a group leader helps the group achieve their aims, handle their problems with the suitable set of attitudes through a programme activity, which presupposes the knowing and understanding of elements of group-dynamics.

Groups offer unique contexts and opportunities for socialization, which derives from the collectivity of its members, and, from the perspective members' socio-emotional needs, group experience is naturally highly satisfying. This is why I think that group-work as a form of professional competence has great potentials, and, therefore, deserves more attention in the education of social educators.

7. Presentation of the results of search so far

This section presents the partial results of a questionnaire that was taken with instructors working in higher education institutions that offer a program in social education. The results of the questionnaire appear to make possible some initial conclusions with respect to the hypothesis.

Figure 1: *Curriculum subjects relevant for group work in the places of education involved in the research*

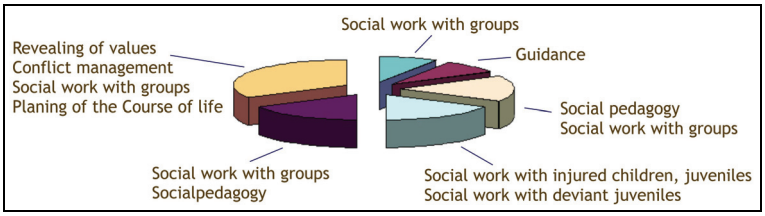


Figure 2: *On the basis of available data, the instructors in the six institutions that were involved in the research expressed the following preferences*

referring to the content of group-work:	referring to the functioning of group-work:
1. Free-time activities	1. Problem centric
2. Socialization-resocialization	2. Group dynamic
3. Improvement of personality	3. Guided conversation
4. Development pedagogy	4. Open conversation

The analysis of the data suggests that the institutions are homogeneous concerning the particular questions. It is interesting to note that free time activity is placed first on content ranking of group-work, which does not appear to harmonise with „problem centric" ranked highest on the functioning of group-work side.

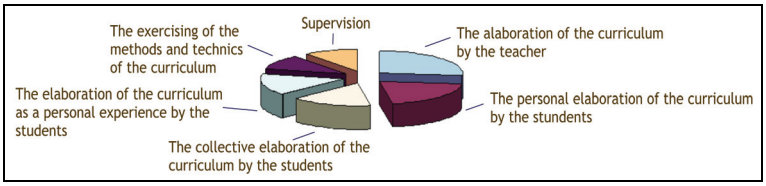
Figure 3: *The table below presents informants' opinions on the optimal dignity of methods that are considered the best in the attainment of group-work:*

1. Structured games and the controlled discussion of the experiences acquired from them
2. Open interactional conversations
3. Groups that work with personal experiences and their methodology
4. Else (lecture, demonstration,explanation,elaboration of special literature, cognitive technics)
5. Attainment of handworker technics
6. Attainment of creative technics (drawing,painting, music)

The dignity of the methods according to the informants as it really works in educational practice:

1. Else (lecture, demonstration, explanation, elaboration of special literature, cognitive technics)
2. Open interactional conversations
3. Structured games and the controlled discussion of the experiences acquired from them
4. Groups that work with personal experiences and their methodology
5. Attainment of creative technics(drawing,painting,music)
6. Attainment of handworker technics

Figure 4: *The methodical solutions preferred by the instructors who teach the subjects that support the attainment of group work:*



STUDIES ON ART PSYCHOLOGY

ANDREA HATVANI

LATENT COGNITIVE STRUCTURES IN LITERARY DIALOGUES AND PSYCHOLOGICAL CONTENT ANALYSIS

This paper presents the results of a literature-psychological research project. The aim of our research is to examine the cognitive structures of authors through their works and to study the way the psychological content analysis reflects these structures.

Our main hypotheses are as follows:

Different authors (dramatists) can be characterized in their way of thinking of human relationships and conflicts by personal structures that distinguish them from each other. These personal structures appear at many levels in the authors' life-work.

From this point of view we can explore differences which distinguish the dialogues of literary works from dialogues of non-literary works such as the dialogues of soap operas.

We can study these characteristics and differences with Ehmann's sequential- transformative content analysis (Ehmann, 2002) in a way that we examine the texts using categories coming from several different sources.

According to the above, our hypotheses are as follows:

1. We assume that in the representation of human relations and conflicts we can explore important conflict types, problems which are well defined by every day language and by psychological terms and which are typical of each author and differentiate his/her work from other writers' and from the conflicts in soap operas.
2. We assume we can conceptualize the permanency of the reaction types, wishes and demand both in the interactional episodes and in the character types which are presumably typical of each author. We can explore these types of reactions and wishes which characterize each author in the interactional episodes with the Core Conflictual Relationship Theme Method (CCRTM).

3. We assume that the authors have distinctive interaction patterns which conceptualize the characteristics of each author at the level of the scenes' structures and which distinguish him/her from the other authors. We assume that these interaction patterns can be explored by the Consensus Rorscach Method (CRM).
4. We assume that the text of the soap operas which can reflect the everyday way of thinking of human relations and conflicts are poorer than the texts of literary works. Soap operas are less rich at the level of CCRTM, which conceptualizes the communicational content of texts, than literary works. By the CRM which characterizes the structure of the communication there is no essential difference between soap operas and dramas. It is less likely that any difference appears at the communication's relational determining level, rather at the level of the communication's content.

Methods

Sequential- transformative content analysis (Ehmann)

The sequential-transformative content analysis as a third approach can be placed between the quantitative and the qualitative analysis. The main idea of Ehmann's method is that there are latent hypothetic variables behind a text. These hypothetic variables are created by the researcher on the one hand, and, on the other hand, they can be taken from another source. These variables can be counted and analyzed statistically (Ehmann, 2002).

The examined latent psychological variables come from the following sources:

- *Empirical-qualitative analysis*: We searched latent psychological variables which can be explored in the text directly, so we created these variables. Our method was that through rereading the examined texts we tried to conceptualize the cause of the conflicts, the way these conflicts ended and to describe their psychological characteristics with everyday words and simple psychological concepts. After having examined every text we united the categories which were identical in their content. Then we considered whether a category appeared in a certain text or not.
- *Consensus Rorschach Method:* We took categories from a method used in clinical psychology. The Consensus Rorschach Method examines not the individual's intrapsychic structure or constellation as the Rorschach test does, but it focuses on the relations and the interactions of the examined people. Therefore the original, tête-à-

tête situation of the Rorschach test enlarges; the CRM is suitable for examining pairs, families and small groups (up to 8 people). The task of the examinee is to find a common answer to each inkblot. They have to agree on one common meaning. So the inkblots are rather for stimulating interactions than for projecting. Willi et al. worked out first a generally valid code system for the Consensus Rorschach in 1973. Nowadays, there are several code systems. The Hungarian research group, Emőke Bagdy et al. established a code system which emphasizes the decision process. This code system can reflect the characteristics of relations, such as the dominance in a relation or the determination of ascendancy and subordination in a relation. The Hungarian code system established by Bagdy et al. uses codes such as question, clarifying explanation, criticism, commendation, congruent agreement, etc. As this code system emphasizes the communicational process itself and it puts aside the analysis of the projected answers on the Rorschach's inkblots we can assume that it could be suitable for analyzing and interpreting free interactions, so for the analysis and interpretation of the dialogues in literary works. We used the codes of the CRM developed by Bagdy et al. as the sequential-transformative content analysis's variables. We adapted the codes to our aims (for example, we did not use the starting phrases and the quality of the ending, but we introduced new codes such as 'offering theme', 'complimentary gesture', 'determination of the relationship' and 'direct agreement- indirect denial') (Bagdy, Kóta, Safir, 2002, Hatvani, 2006).

- *Core Conflictual Relationship Theme Method:* Luborsky et al. developed this method in 1977. The research group at the University of Ulm (Albani, Eckert, et al.) reconstructed the original method. We used their variety. The method was originally developed to analyze the material of the psychotherapic meeting. They examined the narratives; the so-called interactional episodes that the patients told during the meeting and that were about their conflicts with an important person. Through these narratives we can get information about the patients' relations to other people accounted important in their life and we can also learn about the patients' typical conflict-types appearing in their different relations. Luborsky et al. examined three components of the interactional episodes:
- W-component: the wishes (needs and intentions) which characterize the participants of the interactional episode
- S-component: the reactions of the narrator, the patient, the Subject

– R-component: the reactions of the other person in the interactional episode, the reactions of the important other

We have two methods to determine the three components of the CCRT: we can use either personal categories or standard categories. By the personal categories the coder works out short formulas that articulate the essence of the wishes and the reactions. By the standard categories we put the wishes and the reactions into already determined standard categories.

We adapted Crits-Cristoph and Demorest's standard categories as our content analysis's latent hypothetical variables. As the result of the adaptation, the most significant change in the original method was that we did not distinguish 'the objective' and 'the subjective' but we created a common list from the standard list of 'objective' and 'subjective' reactions (Albani, Eckert, 1991, Hatvani, 2006).

The Sample

We examined three plays of three different well-known Hungarian dramatists worked in the second half of the 20th century. The criteria of the selections were that they were recognized dramatists and they used Hungarian language (so we could exclude translation errors). The three dramatists were Imre Sarkadi, István Örkény and Magda Szabó. The examined plays were these: Imre Sarkadi: Kőműves Kelemen,(*Kőműves Kelemen*) Ház a város mellett (*House Close to the City*), Elveszett Paradicsom (*Lost Paradise*); Magda Szabó: Kígyómarás (*Snakebite*), Az a szép fényes nap (*That Beautiful Sunny Day*), Régimódi történet (*Old-Fashioned Story*); István Örkény: Tóték (*The Toth family*), Macskajáték (*Catsplay*), Kulcskeresők (*Key-hunters*). In these dramas we studied all the scenes in which any kind of conflict appears. The studied soap opera was "Barátok közt" (*Among friends*), a currently successfully running Hungarian series.

Results

In order to test interrater reliability there were two independent code makers in the coding of the Consensus Rorschach Method and the Core Conflictual Relationship Theme Method. We used the Atlas.ti and SPSS.12 in the conversion and analysis of the data.

Hypothesis 1

The results of the empirical qualitative analysis:

We compared the characteristics which result from the empirical-qualitative analysis of the three authors' dramas. The following table show these representative similarities and differences. In the table we can see the incidence (per cent) of the different categories we found in different examined works by a particular author.

Categories	Sarkadi	Örkény	Szabó
Differences in ideology and in attitude towards life	56.25	15.90	41.80
Reproaching someone for worrying about him/her	9.80	34.00	23.63
Matter of conscience, taking the responsibility	39.21	13.60	10.90
Someone wants someone else to do something	13.75	18.18	27.27
Someone wills someone else to do something	9.80	25.00	32.72
Inflaming conflict because someone is offensive instead of being defensive	9.80	27.27	0.00
Reproaching of someone's behavior because this behavior is unpleasant for the reproachful person	15.60	52.27	40.00
Conflicts because of old grievances	0.00	2.27	25.45
Good contact on the surface, but latent suspension	7.84	4.54	21.81
The cause of the conflict differs from the motivation of the conflict	11.76	6.80	32.72
Someone seems to be unforgiving toward someone else	0.00	0.00	18.18

The following table shows the comparison of the characteristics of the literary works and the soap opera.

Categories	Literary works	Soap opera
Differences in ideology and in attitude towards life	32.66	2.00
Reproaching someone for worrying about him/her	22.00	14.00
Matter of conscience, taking the responsibility	21.30	10.00
Someone wants someone else to do something	20.00	32.00
Conflicts because of old grievances	10.00	0.00
Quarrel for a third person who is absent	4.00	30.00
Someone wills someone else to do something	22.66	34.00

Someone feels moral superiority over someone else	24.00	14.11
The cause of the conflict differs from the motivation of the conflict	18.00	4.00
Inflaming conflict because someone is offensive instead of being defensive	11.33	24.00
aggression	7.33	18.00

On the grounds of these results the empirical-qualitative analysis confirmed the first hypothesis. The authors and the soap opera can be characterized as follows:

- In the works of *Imre Sarkadi* the most frequent reasons of confrontation are cases for conscience. This could explain why a typical problem in his works is that one of the characters feels moral superiority over the others and why his protagonists have to face their ideological failure (and therefore the failure of their life) through confronting their look upon life and their ideological commitments with each other.
- It is typical of the protagonists of *István Örkény* that they defend their illusions which protect them from facing fear of death, aging, and failure. This may generate the characteristic lying and quibbling of Örkény's protagonists, only in order that they deny the fact of the conflict (and facing their illusions).
- The most characteristic conflict of *Magda Szabó* results from the old, yearlong grievances, the implacability toward each other, from the repressed tensions and /or from the tension that comes from the articulation of the grievances. The conflicts between her protagonists are determined by these old grievances toward each other.
- The soap opera *Among Friends* has fewer characteristics than the works of the three dramatists. However, from the examined dramas it can be differentiated well by the quarrels which are generated by a third, absent character and by the high rate of conflicts, open threats and aggression.

Hypothesis 2

The first part of the hypothesis proves true. The Kruskall-Wallis test shows significant differences ($p<0.05$) in 18 of the 75 codes among the works of the three dramatists. This is more than 25 percent of the codes. In the case of all the three authors there are less than half of the significant differences in their own dramas than in the texts of the three distinctive authors. The Kruskall-Wallis test shows a significant difference ($p<0.05$) in 8 codes in Sarkadi's own work, in 8 codes in Örkény's own dramas and in 6

codes in Szabó's own work. We can statistically prove that there is much greater inner coherence in the dramatists' own works than in the texts written by different authors. In the case of all the three dramatists we find codes in which they differ significantly ($p<0.05$) from the two other authors. In Sarkadi's dramas the codes 'not declaring, but keeping away', 'dominating', 'helping the other' occur less frequently than in the works of the other two authors. In the case of Örkény the code 'being self-confident and strong' is rarer than with the other two dramatists but the codes 'being anxious', 'respecting others' and 'being beloved' are more frequent than with Szabó and Sarkadi. Szabó uses the code 'being happy' less than the other two dramatists and the code 'not adjusting' occurs more frequently in her dramas.

In the second part of the hypothesis we can find only tendencies in the character types which are typical of each author. In Sarkadi's works we can explore the similarities altogether in five pairs, moreover two pairs are in the same play, there are similarities in Szabó's dramas in three pairs, and in Örkény's plays also in three pairs.

Hypothesis 3

This hypothesis also proves true, because we can find significant differences ($p<0.05$) in 12 codes of 24 with the Kruskall-Wallis Test. In the case of all the three dramatists there is a significant difference only in 5 codes among the texts of different dramas written by the same author. We can prove statistically that there is much greater coherence in the dramatists' own works than among the texts from different authors. In the case of all the three authors we can find codes in which they differ from the two other authors significantly ($p<0.05$). Sarkadi uses the codes 'uncertainty', 'question about relationship', 'weaving the words' more often than the other two dramatists. In Örkény's plays the codes 'giving details', 'question about theme', 'clarifying explanation', 'complimentary gesture' occur more frequently than in Sarkadi's and Szabó's dramas. Szabó uses the code 'direct agreement, indirect criticism' more often than the other two.

Studying the results of the factor analysis we can discover 9 factors in Sarkadi, 6 factors in Örkény and 8 in Szabó. This difference can imply the existence of an originally distinct latent structure. Examining how much the factors overlap each other we can state that none of the 23 factors overlap each other totally. Among all three authors there are two factors which overlap each other partially and there are two between Örkény and Sarkadi and two between Örkény and Szabó. This supports the hypothesis that there

are distinct latent structures in the background of the way of thinking of human interactions and conflicts in all the three dramatists.

Hypothesis 4

We can prove this hypothesis partially.

We define poorness and richness according to prevalence of the codes of CRM and CCRTM in the texts; whether there are fewer codes with higher average in a text or whether there are many codes with low or medium average. In CCRTM there are no significant differences from the point of view of richness and poorness.

Conclusion, Further Possibilities

We can generally declare that we have achieved our main goal, though not all our hypotheses proved true. On the one hand, we managed to explore characteristics in which there is a significant difference between the works of certain dramatists and the soap opera which reflects everyday way of thinking. On the other hand, we found features which are typical of an author's work, therefore we can assume that authors' ways of thinking of human relations and conflicts can be characterized by latent structures which distinguish them from any other authors.

Our research proved right methodologically. From the studies to the main examination we realized an investigation which is inspired by the narrative sequential-transformative content analysis, although it does not belong to narrative research. While the hypothetic variables of the narrative content analysis come form the field of literary history, our hypothetic variables derive from clinical psychology. We do not know of any other research in which methods of clinical psychology serve as hypothetic variables.

This fact distinguishes our study from any other previous art psychological studies. To our knowledge, before us only Erika Oláh and Erika Zolnai had used the code system of the Consensus Rorschach Method developed by Emőke Bagdy et al. for literature psychological purposes. They applied this method only for the analysis of one drama, while with this method we explored characteristics appearing in several works of an author. To our knowledge, the Core Conflictual Relationship Method is applied in Hungary neither for clinical, nor for art psychological purposes.

This methodological innovation raises several further investigational application areas. Thus, we can employ our methods either to the analysis of the life-work of an author, or to the better understanding of certain literary

works. We can also use it for a comparative analysis of different works and different groups of authors.

One way to develop our study could be extending the analysis to non-literary texts. Thus, we can take into the study the examination of the dialogues written by non-professionals and non-amateurs. We can extend our study through examining whether there are differences between the works of everyday people and those of the professionals, and if these differences exist how we can conceptualise them. Furthermore, studying how we can determine the place of these experimental texts between the literary works and the soap operas and to which these experimental texts are similar and from which they differ.

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KATALIN HÉJJA-NAGY

MUSICAL INVOLVEMENT: A PERSONALITY TRAIT THAT DETERMINES MUSICAL EXPERIENCES

Background

This short study investigates musical involvement. We want to know whether this is a characteristic of a person (let us say, a personality trait) that determines musical experiences. Here we focus on those parts of a comprehensive study that were concerned with individual differences in musical experiences depending on the capacity for musical involvement, and also depending on the type of music listened to.

What is involvement? There are situations in everyday life when the individual is fully involved in a certain activity. These so-called hypnotic-like, or peak, or strong experiences have long been studied by hypnosis researchers, among others, to find a personality characteristic that is in connection with hypnotic susceptibility. A number of terms have been defined to refer to the individual differences in the capacity for involvement in these experiences. The most important of these concepts are 'absorption' (Tellegen-Atkinson, 1974), 'imaginative involvement' (Hilgard, 1979), and 'phantasy-proneness' (Wilson-Barber, 1983). Music seems to be a special field of involvement. Musical experiences are complex ones, which consist of images, emotions, thoughts, physical responses, etc. Psychologists, aesthetes and researchers of many other disciplines have tried to catch the essence of musical experiences for centuries. It seems obvious that involvement in musical experiences occurs, too. Hilgard (1979) found that the area of involvement in sensory experiences is the most hypnotic-like and says that while listening to a musical piece, a background of feeling and imagination characterizes the individual. Gabrielsson (2001) studied self-reports of strong experiences of music and gives a detailed description of these phenomena.

There are great individual differences in musical experiences. Perhaps the capacity for being involved in music is characteristic of a person. It may be different from general absorption in everyday experiences, since this field is very special.

According to former observations and questionnaire studies, the capacity for being involved in music is characteristic of a person. In our previous study, we found significant differences between high and low musical involvers considering music preferences, music-listening customs and meaning of music. We assumed that the capacity for musical involvement would influence the music-listening experience of our subjects. The other factor that may determine musical experience is the type of music. Related literature and everyday experiences suggest that different types of music induce different changes in the listener.

Aims

Aims of the present research were to study whether musical experiences show differences depending on the capacity for musical involvement and the type of the music listened to in a laboratory setting.

Methods

Instruments

Musical Involvement Scale. A 29-item, Likert-type scale was developed and used to measure the capacity for musical involvement (Nagy-Szabó, 2002).

Music. We chose 3 pieces of music for music-listening. The criteria for the choice were that the musical pieces should be different in style (to induce different experiences), and should be likely to be unknown for our subjects (to reduce the influence of previous experiences).

The musical pieces we used (15 minutes each):

- Gustav Holst: Planets / Venus, Neptun (contemporary)
- Kitaro: Moon star, Song for pray (easy-listening)
- Techno-remix from various artists (techno)

The Phenomenology of Consciousness Inventory (PCI). This questionnaire was developed by Pekala (1982), and is used for studying the phenomenology of altered states of consciousness in various fields. Scores are measured along 12 scales. Version I. and II. were both used.

Procedure

The Musical Involvement Scale was administered to 500 university students in Debrecen, Hungary. Summated scores of the questionnaire followed a normal distribution. High and low involvers (as defined by the mean and standard deviations of the scores: scores of more than M+1 SD, or less than M-1 SD) were asked to take part in the laboratory experiments.

In the experiments, subjects (N=120) had to speak about an interesting experience of their life first (control-state), then they filled in one version of the PCI regarding their experiences of that time. Then they listened to one of the musical pieces (randomly chosen) alone, in a darkened room, in a comfortable armchair. They explained their experiences in a free report (all reports were tape-recorded and then written down word by word for further analysis).

Subjects then filled in the other version of the PCI regarding their music-listening experiences. Finally, subjects were asked some questions about their music-listening experiences in a semi-structured interview.

Results

Analysis of the results

Free reports were content-analysed, data was subject to further analysis. We used Atlas.ti software for content-analysis of musical experiences, where the following categories emerged:

- Physical reactions (e.g. Moving, Physiological reactions, Changed body-experience)
- Emotions (Positive, Negative, Conflicting emotions)
- Perception (Tactile perception, Visual perception)
- Cognition (e.g. Memories, Imagery, Musical analysis, Thinking on actual problems)
- Trance-like experiences (e.g. Changed experience, Flow, Transcendental experience)

Reports of high and low involvers were compared by means of Mann-Whitney tests, differences between musical types were examined by means of Kruskal-Wallis tests. General Linear Models repeated measures test was used for the complex analysis of data emerged of the PCI.

Differences in the control-state

Content analysis of free reports. The content categories used for analysis of the musical reports did not show up in the reports of the control state. This means that subjects had totally different experiences in the two conditions, and the stories in this state were so diverse that we could not use the data of content analysis for comparing the groups.

Analysis of the PCI questionnaire. Unexpectedly, we found significant differences between high and low musical involvers regarding the experiences of the control-state as indicated by the PCI questionnaire. High involvers experienced greater alterations in their experiences ($p<0.01$),

imagery ($p<0.05$) and experienced more altered state of consciousness ($p<0.01$).

Differences between musical experiences of high and low musical involvers

Content analysis of free reports. Considering the results of the free reports, high musical involvers had stronger experiences overall. We found significant differences in the following categories:

- Physiological experiences ($p<0.05$)
- Movements ($p<0.001$)
- Positive emotions ($p<0.001$)
- Imagery ($p<0.05$)
- Visual and tactile perception ($p<0.05$)
- Trance-like experiences ($p<0.001$)

Analysis of the PCI questionnaire. Analysing the PCI questionnaires, we found similar differences. Compared to the control-state, high musical involvers reported about greater alterations than did low involvers in the following PCI scales:

- Altered experience ($p<0.001$)
- Positive emotions ($p<0.01$)
- Focused attention ($p<0.05$)
- Vivid imagery ($p<0.001$)
- Relaxation ($p<0.01$)
- Altered state of awareness ($p<0.001$)

Accordingly, they had less volitional control over their experiences ($p<0.05$).

Differences between musical experiences of different musical types. We found significant differences between the experiences of the groups listening to different types of music. Here we report about the specifics of the music-groups, we present the results of content-analysis and the analysis of PCI questionnaire combined.

Holst music: Compared to the other music-listening groups, listeners of the Holst music experienced more altered states of consciousness ($p<0.01$), negative emotions ($p<0.01$, e.g. fear), conflicting emotions ($p<0.01$, e.g. ambivalence), imagination ($p<0.01$), transcendental experiences ($p<0.01$) and more physical reactions ($p<0.01$). They usually saw dark forest.

Kitaro music: Subjects who had listened to Kitaro mostly reported about altered experiences ($p<0.01$), positive emotions ($p<0.001$, like majesty,

love), and increased imagery ($p<0.01$). Their images usually consisted of huge hills, the sea, or flying in the sky.

Techno music: Those listening to techno music reported about few changes in subjective experience. Their musical experiences consisted of movements, visual perceptions of lights and colours ($p<0.01$), and they had few emotions (mainly boredom or anxiety).

Analysis of the interviews

Analysis of the interviews revealed some interesting additional results. The most important of these are as follows:

- None of the 120 subjects had heard the music before.
- High involvers felt more comfortable in the laboratory situation.
- Low involvers were more precise in estimating the duration of music-listening.
- Those who liked the music the heard had stronger experiences than those who did not.

Conclusions

Capacity for musical involvement and type of music have a strong influence on musical experiences. Therefore, the Musical Involvement Scale proved to be effective in predicting the strength of musical experience, and furthermore, verified the assumption that musical involvement is a characteristic of a person that determines musical experiences. The two measurement methods corroborate each other's findings, PCI questionnaire and content analysis seem to be useful in studying the phenomenology of music-listening, and conceptualising incomprehensible elements of musical experiences.

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